MINE SAFETY

(Metallic and Nonmetallic Mines)

HEARINGS (and REPORT)

BEFORE THE

COMMITTEE ON EDUCATION AND LABOR

HOUSE OF REPRESENTATIVES

EIGHTY-FOURTH CONGRESS

ON

BILLS RELATING TO INSPECTIONS AND INVESTIGATIONS IN METALLIC AND NONMETALLIC MINES AND QUARRIES (EXCLUDING COAL AND LIGNITE MINES) FOR THE PURPOSE OF OBTAINING INFORMATION RELATING TO HEALTH, SAFETY CONDITIONS, ACCIDENTS, AND OCCUPATIONAL DISEASES THEREIN, ETC.

HEARINGS HELD IN VIRGINIA, MINN., AUGUST 22; DULUTH, MINN., AUGUST 24; BUTTE, MONT., SEPTEMBER 18, 19; OURAY, COLO., SEPTEMBER 21; AND WASHINGTON, D. C., DECEMBER 3, 4, AND 5, 1956

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REPORT OF SUBCOMMITTEE ON MINE SAFETY

(Metallic and Nonmetallic Mines)

The Subcommittee of the House Committee on Education and Labor on Mine Safety in Metallic and Non-Metallic Mines has studied safety conditions in those mines by field inspections and observations in Virginia, Hibbing, and Duluth, Minn., in Butte, Mont., and Ouray, Colo., and has held 3 days' hearings in Washington where witnesses from the mining industry, labor, the United States Bureau of Mines, and the United States Public Health Service were heard.

Based upon these on-the-spot investigations and observations by the subcommittee members and upon the formal hearings, the subcommittee is of the unanimous opinion that the overall subject of safety in the Nation's metallic and nonmetallic mines should be given further study, and that additional investigations should be made in Michigan, Alabama, Colorado, the tristate area of Kansas, Oklahoma, and Missouri, and such other places as a subsequent committee might find necessary.

The subcommittee recommends to the chairman and to the full Committee on Education and Labor of the United States House of Representatives that a new subcommittee be appointed in the 85th Congress, and that the hearings mentioned above, plus such other hearings as may be indicated, be held to the end that the subject of safety in metallic and nonmetallic mines be thoroughly explored.

Respectfully submitted.

LEE METCALF, *Chairman.*
CARL ELLIOTT.
PHIL M. LANDRUM.
JOHN J. RHODES.
ORVIN B. FJARE.

DECEMBER 11, 1956.

MINE SAFETY (METALLIC AND NONMETALLIC MINES)

WEDNESDAY, AUGUST 22, 1956

UNITED STATES HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON MINE SAFETY OF THE
COMMITTEE ON EDUCATION AND LABOR,
Virginia, Minn.

The subcommittee met, at 10:05 a. m., pursuant to call, in the city council chambers, City Hall, Virginia, Minn., Hon. Lee Metcalf (chairman of the subcommittee) presiding.

Committee members present: Representatives Metcalf and Landrum.

Also present: Representative Blatnik.

Staff members present: Russell C. Derrickson, chief investigator, Committee on Education and Labor.

Mr. METCALF. The subcommittee will be in order.

This is a subcommittee of the House of Representatives' Committee on Education and Labor, convened under authority of a letter by the chairman of the full committee, Hon. Graham A. Barden.

The reporter will insert in the record at this point Mr. Barden's letter of authority and appointment of the subcommittee.

(The letter referred to follows:)

JULY 7, 1956.

Hon. LEE METCALF,
House of Representatives,
Washington, D. C.

DEAR MR. METCALF: The chairman has directed me to notify you that, by virtue of the authority vested in him as chairman of the Committee on Education and Labor, he has appointed you as chairman of a special subcommittee to consider and hold hearings with respect to H. R. 9269, 9294, 9343, 11376, 11658, 11713, and 11997, bills relating to mine safety.

The special subcommittee will consist of the following members of the committee on Education and Labor: Hon. Lee Metcalf, chairman; Hon. Carl Elliott; Hon. Phil Landrum; Hon. John J. Rhodes; Hon. Orvin B. Fjare.

Sincerely yours,

FRED G. HUSSEY, *Chief Clerk.*

Mr. METCALF. The members of the subcommittee are the Honorable Phil A. Landrum, Congressman from Georgia; the Honorable Carl Elliott, Congressman from Alabama; the Honorable John Rhodes, Congressman from Arizona; and the Honorable Orvin Fjare, Congressman from Montana.

Mr. Elliott had intended attending these hearings. He is interested in and concerned with this problem of mine safety in his own area in Alabama as well as the national problems. He, however, was prevented from attending the hearings because of illness in his family, and will join the subcommittee some time today or tomorrow.

83066—56——2

Mr. Rhodes and Mr. Fjare are the minority members of the committee, and they, too, are concerned with this problem, and in executive sessions preceding this first formal hearing expressed their concern. However, they have other business right now that is equally pressing, and they are unable to attend this series of hearings.

However, I will assure all the members that are here that they will carefully read the record and work very hard on this problem, and I only regret that they missed the fine trip yesterday when we visited the various mines in the area.

Before we go ahead and call witnesses, I want to introduce the members of the staff who are with me. Our reporter is Mr. Don Johnson, of Washington, D. C., who has reported a good many of the congressional hearings, and our special investigator and staff assistant for this subcommittee is Mr. Russell Derrickson.

We are also pleased to have with us the Congressman from the Eighth District of Minnesota, the Honorable John Blatnik, whose efforts on behalf of the miners and employers of not only your district, but the Nation, have always been appreciated, and whose services to the Congress not only in his own committee, but services before the committee and appearances before this Subcommittee on Minimum Wages, have always helped.

John, I know every member of the subcommittee appreciates the efforts you have put forth in arranging these hearings. I wanted the record to show that you were here and present, and I want you to feel free to interrogate any witnesses just as if you were a full-fledged member of the committee.

Mr. BLATNIK. Thank you, Mr. Chairman.

Mr. METCALF. The immediate source of these hearings is a series of bills introduced in Congress in the second session.

At this point in the record, in deference to our colleague from Minnesota, I am going to have H. R. 9294 inserted by Congressman Blatnik, of Minnesota. Will the reporter also note, and Mr. Derrickson note for the reporter, the numbers of the other identical bills introduced by other Members of Congress.

(Bills introduced by other Members of Congress relating to mine safety follow:)

Mr. Kelley of Pennsylvania, H. R. 9269; Mr. Metcalf, H. R. 9343; Mr. O'Hara of Illinois, H. R. 11997; Mr. McConnell, H. R. 11376; Mr. Fulton, H. R. 11658; and Mr. Saylor, 11713.

(The bill H. R. 9294 referred to follows:)

[H. R. 9294, 84th Cong., 2d sess.]

A BILL Relating to certain inspections and investigations in metallic and nonmetallic mines and quarries (excluding coal and lignite mines) for the purpose of obtaining information relating to health and safety conditions, accidents, and occupational diseases therein, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior, acting through the United States Bureau of Mines, is hereby authorized and empowered to make or cause to be made annual or necessary inspections and investigations in metallic and nonmetallic mines and quarries the products of which regularly enter commerce or the operations of which substantially affect commerce—

(a) for the purpose of obtaining information relating to health and safety conditions in such mines and quarries, the causes of accidents involving bodily injury or loss of life therein, or the causes of occupational diseases

originating therein, whenever such health or safety conditions, accidents, or occupational diseases burden or obstruct commerce or threaten to burden or obstruct commerce;

(b) for the purpose of obtaining information relating to health and safety conditions in such mines and quarries, the causes of accidents involving bodily injury or loss of life therein, or the causes of occupational diseases originating therein, as a basis for determining the most effective manner in which the public funds made available for the protection or advancement of health or safety in metallic and nonmetallic mines and quarries, and for the prevention or relief of accidents or occupational diseases therein, may be expended for the accomplishment of such objects;

(c) for the purpose of obtaining information relating to health and safety conditions in such mines, and quarries, the causes of accidents involving bodily injury or loss of life therein, or the causes of accupational diseases originating therein, as a basis for the preparation and dissemination of reports, studies, statistics, and other educational materials pertaining to the protection or advancement of health or safety in metallic and nonmetallic mines and quarries and to the prevention or relief of accidents or occupational diseases therein;

(d) for the purpose of obtaining information relating to accidents involving bodily injury or loss of life in such mines and quarries, or relating to occupational diseases originating therein, to be transmitted to the Bureau of the Census for us in connection with the preparation and compilation of the various census reports; and

(e) for the purpose of obtaining information relating to health and safety conditions in such mines and quarries, the causes of accidents involving bodily injury or loss of life therein, or the causes of occupational diseases originating therein, to be transmitted to the Congress for its consideration in connection with legislative matters involving health and safety conditions, accidents, or occupational diseases in metallic and nonmetallic mines and quarries.

SEC. 2. The Secretary of the Interior, acting through the United States Bureau of Mines, is further authorized and empowered to make or cause to be made the inspections and investigations provided for in the first section of this Act at other than annual intervals at any time in his discretion when the making of such inspections or investigations in the mine or quarry concerned will be in futherance of the purposes of this Act.

SEC 3. The Secretary of the Interior, acting through the United States Bureau of Mines, is further authorizing and empowered to make or cause to be be entitled to admission to any metallic and nonmetallic mine or quarry, the products of which regularly enter commerce or the operations of which substantially affect commerce, for the purpose of making any inspection or investigation authorized under the preceding sections of this Act.

SEC. 4. Any owner, lessee, agent, manager, superintendent, or other person having control or supervision of any metallic and nonmetallic mine or quarry subject to the provisions of section 1 or section 2 of this Act who refuses to admit the Secretary of the Interior, acting through the United States Bureau of Mines, or any duly authorized representative of such Bureau, to such mine or quarry, pursuant to the provisions of section 3 of this Act, shall be guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine not exceeding $500 or by imprisonment not exceeding sixty days, or by both.

SEC. 5. Every owner, lessee, agent, manager, superintendent, or other person having control or supervision of any metallic and nonmetallic mine or quarry, the product of which regularly enter commerce or the operations of which substantially affect commerce, shall furnish to the Secretary of the Interior, acting through the United States Bureau of Mines, or to any duly authorized representative of such Bureau, upon request, complete and correct information to the best of his knowledge concerning any or all accidents involving bodily injury or loss of life which occurred in such mine or quarry or during the calendar year in which the request is made or during the preceding calendar year.

SEC. 6. The Secretary of the Interior, acting through the United States Bureau of Mines, is hereby authorized and directed—

(a) to report annually to the Congress, either in summary or detailed form, the information obtained by him under this Act, together with such findings and comments thereon and such recommendations for legislative action as he may deem proper;

(b) to compile, analyze, and publish, either in summary or detailed form, the information obtained by him under this Act, together with such findings concerning the causes of unhealthy or unsafe conditions, accidents, or occupational diseases in metallic and nonmetallic mines and quarries, and such recommendations for the prevention or amelioration of unhealthy or unsafe conditions, accidents, or occupational diseases therein as he may deem proper;

(c) to prepare and disseminate reports, studies, statistics, and other educational materials pertaining to the protection or advancement of health or safety in metallic and nonmetallic mines and quarries and to the prevention or relief of accidents or occupational diseases therein;

(d) to expend the funds made available to him for the protection or advancement of health or safety in metallic and nonmetallic mines and quarries, and for the prevention or relief of accidents or occupational diseases therein, in such lawful manner as he may deem most effective in the light of the information obtained under this Act to promote the accomplishment of the objects for which such funds are granted;

(e) to transmit to the Director of the Census, either in summary or detailed form, the information obtained by him under this Act, for use in connection with the preparation and compilation of the various Census reports; and

(f) to make available for public inspection either in summary or detailed form, the information obtained under this Act, as soon as practicable after the acquisition of such information.

SEC. 7. The execution of the provisions of this Act shall devolve upon the United States Bureau of Mines and the Secretary of the Interior may designate other bureaus or offices in the Department of the Interior to cooperate with the United States Bureau of Mines for such purpose. In order to promote sound and effective coordination of Federal and local activities within the field covered by this Act, the Secretary of the Interior, and the several bureaus and offices under his jurisdiction, shall cooperate with the official mine inspection or safety agencies of the several States and Territories, and, with the consent of the proper authorities thereof, may utilize the services of such agencies in connection with the administration of this Act. Copies of all findings, recommendations, reports, studies, statistics, and information made public under the authority of clauses (b), (c), and (f) of section 6 of this Act shall, whenever practicable, be furnished any cooperating State or Territorial agency which may request the same.

SEC. 8. (a) The Secretary of the Interior, acting through the United States Bureau of Mines, shall create and establish an advisory committee composed of not more than six members to exercise consultative functions in connection with the administration of this Act. Such committee shall be composed of representatives of metallic and nonmetallic mine and quarry owners and of representatives of metallic and nonmetallic and quarry workers in equal number. The members of such committee shall be appointed by the Secretary of the Interior without regard to the civil-service laws.

(b) The advisory committee in cooperation with the Bureau of Mines shall promulgate a code of reasonable standards and rules pertaining to safety and health conditions and practices in metallic and nonmetallic mines and quarries to serve as a guide for making recommendations under this Act.

SEC. 9. The Secretary of the Interior, acting through the United States Bureau of Mines, shall have authority to appoint, subject to the civil-service laws and the Classification Act of 1949, as amended, such officers and employees as he may deem necessary to carry out the provisions of this Act, and to prescribe the powers, duties, and responsibilities of such officers and employees.

SEC. 10. There are hereby authorized to be appropriated, out of any moneys in the Treasury not otherwise appropriated, such sums as may be necessary to carry out the provisions of this Act.

SEC. 11. For the purposes of this Act—

(1) The term "commerce" means trade, traffic, commerce, transportation, or communications between any State, Territory, possession, or the District of Columbia and any other State, Territory, possession of the United States, or between any State, Territory, possession, or the District of Columbia and any foreign country, or wholly within any Territory, possession, or the District of Columbia, or between points in the same State if passing through another State

or through any Territory, possession, or the District of Columbia or through any foreign country.

(2) The term "metallic and nonmetallic mines and quarries" includes all types of mine and mining operations including but not limited to mines, quarries, open pit operations, and strip mines, except that it shall not be deemed to include coal and lignite mines.

SEC. 12. If any provisions of this Act, or the application thereof to any persons or circumstances, is held invalid, the remainder of this Act, and the application of such provision to other persons or circumstances, shall not be affected thereby.

Mr. METCALF. Without further going into the regulations before the committee that will be discussed, I am going to call the first witness.

I understand that our first witness is Mr. W. K. Montague, who is counsel for the Lake Superior Industrial Bureau of Duluth, Minn. Mr. Montague will introduce and present the testimony of the other witnesses to be called.

STATEMENT OF W. K. MONTAGUE, COUNSEL, LAKE SUPERIOR INDUSTRIAL BUREAU, DULUTH, MINN.

Mr. MONTAGUE. Mr. Chairman and members of the committee, I do not propose to discuss the bill or discuss mine safety. It will be done by the other representatives who will appear for the industry.

My only purpose is to introduce them and see that the whole story is told to the committee. At the outset, on behalf of the industry, however, I would like to welcome the committee here. We have enjoyed having you with us. If during the course of the hearing you detect some lack of enthusiasm on our part for having the Great White Father move in and live with us in this mine business, I can assure you that does not extend to visits such as this from your subcommittee.

In order that you can follow the presentation, may I state that on behalf of the industry our main presentation will consist of three witnesses, all representatives of the safety departments of three of the leading mining operators here.

They will present different phases of the safety problem. The first man, Al Kolu, will present it from the standpoint of how the safety departments in mining companies, in cooperation with the safety committees of the union and the other organizations, are handling the problem at the present time.

The second witness, Robert Wilson, will present the statistics as to what progress has been made in the way of mine safety, what the present situation is from a statistical basis.

The third witness, George A. Borgeson, will discuss the present legislative and other organizations which are cooperating in safety work in the Lake Superior district.

I mention that so you may know from the standpoint of questioning witnesses what is going to follow and what each one will present; and now I would like to present Mr. Al Kolu.

Mr. BLATNIK. Will the gentleman yield at this point?

Mr. MONTAGUE. Yes.

Mr. BLATNIK. I want to have the record show that it was on rather short notice that we got permission from the chairman of the full committee, Mr. Barden, to have this subcommittee come here. I wrote at once a preliminary advance alert to all the industry and labor con-

cerned in this area, and I want the record to show we got an immediate response, a most favorable response, not only welcoming us here but inviting us to see any operation we desired, even suggesting operations that we did not know of.

We appreciate, in the limited time, the splendid, coordinated tour which was allowed this subcommittee yesterday, to give them a cross section of the varied types of operations here, so we better understand the specifics which are presented here this morning.

We want to extend to the industry and to labor certainly my appreciation for the splendid cooperation on such short notice.

Mr. METCALF. If the gentleman will yield further at this point, I want to concur in what our colleague, Mr. Blatnik, has said. We have had the finest cooperation that it has been my experience to receive from a group of people. I feel we attribute it to the employers and employees of this area, as well as the splendid work of Congressman Blatnik.

I want at this point to impress upon the record and upon the audience that there have been no objections as to safety conditions in this area that impelled the committee to visit this area. Quite the contrary, it is because of some of the outstanding safety records that have been set up in this area that we decided to start our tour at this particular area in order that we could begin to see the things that you have done and compare them with things that are in existence in other regions.

I again want to impress that we have had no objections, no complaints, and the reason for this committee being here is because of your outstanding achievements and because we want to see what can be done and compare that with what should be done elsewhere.

Mr. MONTAGUE. Thank you very much, Mr. Chairman and Congressman Blatnik.

At this time, then, I would like to present Mr. Al Kolu, of the safety department of Pickands Mather & Co. Pickands Mather & Co. is the second or third largest operator in the Lake Superior district. They manage mines, manage the operation of mines, for some 20 or 22 different individual mining companies, the stock in the individual companies being primarily owned by different groups of steel companies, the ownership varying in different mines. Pickands Mather & Co. acts as manager for those mines, and Mr. Kolu is in the safety department of Pickands Mather.

I would like to present Mr. Al Kolu.

Mr. METCALF. If you will come forward, I notice that you have a prepared statement, and you can read the statement or can summarize it or you can present your testimony in any way you see fit.

STATEMENT OF AL KOLU, ASSISTANT SAFETY SUPERVISOR, PICKANDS MATHER & CO., DULUTH, MINN.

Mr. KOLU. Chairman Metcalf and members of the congressional subcomimttee, the iron ore mining industry of this area welcomes the opportunity to relate what we are doing in safety through well coordinated safety programs and utilization of all available safety aids. Organizations and agencies whose purpose is the promotion of safety are fully utilized in attaining our goal, namely, a place of work where there are no hazards to life or health.

Included among those organizations and governmental agencies are the Federal Bureau of Mines and the Minnesota State Industrial Commission, both of which serve our industry well through inspection, counseling, training and dissemination of safety material. The cooperation of these two agencies will be further discussed in a following presentation.

The laws of the State of Minnesota provide for inspection of every mining operation at least once in every 90 days. The mines that you visited yesterday are located in St. Louis County, which has a county mine inspector and assistant, both with wide experience and a thorough knowledge of mining. In addition to inspections, these qualified men are frequently consulted by the mining companies on mine safety problems.

Every mining company in this area is required to meet very definite standards if they are to qualify for proper insurance coverage. This means, therefore, that other regular inspections are made by representatives of these insurance companies, and compliance with recommendations of these representatives is mandatory on the part of the mining companies to retain insurance coverage. The insurance companies employ experienced investigators who closely review adherence to conditions necessary for maintenance of proper fire protection and equipment necessary to protect workmen and facilities.

Aside from the humanitarian angle, mine management has long recognized the fact that the prevention of accidents is just plain good business. An accident is a loss to the employer, as well as to the individual. Being vitally interested in the safety problem, management has provided a sound safety program at every mine.

This program originates with top management. Local mine management and supervisory personnel during their daily rounds of the properties in their charge are constantly inspecting for safety hazards. Many of the companies' program have exchange of supervisory personnel between operations solely for the purpose of safety inspection and for dissemination of safety ideas and common safety promotion programs.

The mining companies have well organized safety departments headed by a trained and experienced safety director and assisted by well qualified and carefully selected safety inspectors. These men are thoroughly trained in the work that they are performing, which work is confined only to safety activities.

Safety is considered a staff function by the companies and close association is maintained with top management. In my company, safety personnel usually inspect each operation at least once each week. After each inspection, detailed reports are submitted in writing and recommendations are made and are complied with.

Certainly one of the most important inspection programs is that conducted jointly by the union and the management. The labor agreements of all companies establish the provisions under which inspection is made by joint committees representing the unions and the companies. The following provision is contained in the basic labor agreement of the company which I represent and substantially similar language is in agreements of the other companies:

ARTICLE XIV. SAFETY AND HEALTH

SECTION 2. The union may designate employees with at least 1 year's experience at the mine, not less than 3 or more than 5 in number, to form, with a similar number of representatives designated by the management, the safety committee at the mine. The members named by the union may be designated as representatives of particular departments of the mine. A member designated as representing a particular department may accompany the safety inspector of the company on an inspection of the department at least once each month, and may accompany any county or State mine inspector on any such inspections conducted by him if required by law or agreeable to such inspector. Following such inspection trip, there shall be a meeting of the safety committee at which recommendations with respect to safety conditions may be made, and at which time the action taken upon recommendations previously made shall be discussed. At the request of the safety committee, one member thereof may accompany management on its investigation of any serious or potentially serious accident.

These contractual provisions have been religiously adhered to by both parties. Fine cooperation has been received from the union committees, which has contributed greatly to the fine safety records achieved in this industry.

The people actively performing the work have recommended many worthwhile safety improvements which have been adopted by the companies. In addition to joint union-management activities, many individual workmen offer suggestions, many of which have proven invaluable in our safety program.

It is obvious from the facts presented that a minimum of five agencies are directly involved in inspection of mining properties for the promotion of safety. Representatives of these agencies as outlined are extremely well qualified in the performance of their duties and certainly adequate and proper machinery has been set up for regular safety inspections and for the compliance with and enforcement of safety rules and regulations. Any corrective action which mine inspections show to be necessary is taken promptly for the sole purpose of eliminating any potential causes of accidents.

It is one of the duties of the safety department to establish an approved safety program which includes provisions requiring regular inspections and meetings. This department is also responsible for preparing safety rules and guides for safe practices.

Safety meetings constitute one of the major functions of the safety program. Meetings are usually held following the inspections, and invariably following union-management inspections. These meetings are attended by management personnel, members of employees' safety committees appointed by the union, and personnel of the safety department.

Meetings of this nature are held at least once a month, and more often if a need is indicated. Other meetings are a part of the safety program of the companies. For example, each supervisor is required to contact every employee at stated intervals for the sole purpose of talking safety. Also, meetings are periodically held by the safety department with employees, at which time visual or audio aids are often employed to promote safety.

Of paramount importance in any safety program is the maintenance and development of recommendations for safety improvement. This is a function assigned directly to the safety departments.

Statistics are an invaluable aid in formulating any safety program and in evaluation of the results of that program. Each company's safety department maintains statistics on all accidents occurring in

the area of its jurisdiction. It was recognized by the industry many years ago that individual company statistics should be related to the entire industry picture; further, that an exchange of information covering the minutest detail of accidents would prove invaluable in developing means to avoid reoccurrence.

For this reason, many years ago an organization was formed known as the Lake Superior Mines Safety Council. At its inception, there were 19 mining companies represented within its original membership. At present there are 26 member companies.

One of the functions of this Lake Superior Mines Safety Council is the exchange of reports of injury, as well as dissemination of accident statistics, frequency and severity rates, for comparison purposes, in the common interest of lowering the accident rate, and also details on acicdent-prevention methods.

Monthly sectional meetings are held by this council and are attended by representatives of management and the safety departments to exchange information on safety activities, methods, and devices, and to bring before the group leading speakers of diversified experience for the purpose of safety education.

Each year a general, 2-day conference is held, at which time many of the national leaders in safety are brought in for lectures and discussion purposes. These annual conferences are attended by approximately 800 mine supervisors.

Various manufacturers of safety equipment provide exhibits and send representatives to this conference to demonstrate the latest in safety equipment. Numerous industrial concerns send representatives, and individuals from many other mining districts in the United States and Canada also attend and participate.

The various mining companies also display safety devices that have been developed within their organizations. Since it is evidence that by far the greatest number of acidents result from human failure—authorities state that this runs from 80 to 90 percent—many of the speakers at this conference devote their presentation to the psychological factors involved in accidents.

Most of the member companies of the Lake Superior Mines Safety Council are also members of the National Safety Council. The mining companies furnish participants in the various activities of the national council and each year provide speakers for the mining section of the National Safety Council's annual conference.

The mining companies keep well informed on the latest developments for the safety and health of their employees, and utilize any equipment or methods which have proven contributory to safety through the experience of all industry. Many proven approaches to good safety and health programs are an essential part of any safety program.

Among these accepted methods of "selling" safety which are fully utilized by the companies are safety bulletins posted in prominent places at the operations, safety pamphlets, safety slogans displayed on stationary and mobile equipment, and articles and contests published in house organs. Radio has also been used by the industry, which last year sponsored a series of 15 programs devoted to safety both on and off the job.

Many of the mining companies have instituted safety award of incentive programs, with prizes given for outstanding individual or group safety records.

The mining companies have always encouraged safety suggestions from both employees and supervisors. Many companies provide safety suggestion boxes for this purpose. Hundreds of very worthwhile safety devices and ideas have thus been developed and are in use today.

I have briefly discussed the many activities engaged in by the mining companies which have contributed to the enviable safety record of the iron ore companies. Other agencies prove of great value in assisting us in making our operations a safe place in which to work.

The Federal Bureau of Mines provides personnel trained in safe practices to assist mine management in many ways. At present, the companies are cooperating with the Bureau of Mines in preparation of a film made locally and devoted to the prevention of falls of ground in underground mining, and more safety films are in the planning stage.

The Bureau of Mines provides instructors for training in first-aid and mine-rescue work. The companies have all availed themselves of the opportunity to obtain this training. The local director acts in the capacity of secretary for the Lake Superior Mines Safety Council and correlates many of the activities of the Bureau of Mines with mine safety activities.

This Federal Bureau provides numerous other services to the mining companies such as safety and health consultation, ventilation surveys, demonstrations, publication of reports, and is a clearinghouse for general safety and health information.

I feel that the foregoing demonstrates the interest of all phases of management in establishing maximum safety throughout the mining industry. Adherence to the safety programs is regularly audited by representatives of management. Innumerable inspections are now being made by company, county, and State personnel and any action indicated is promptly taken.

The success of this safety effort is proven by the declining accident rate within the industry. Statistics demonstrating the improvement in accident experience will be presented by a following speaker. The health and welfare of our employees is a major concern of management and all methods are now being provided that are necessary for the attainment of true safety.

Thank you.

Mr. METCALF. Mr. Montague, would you prefer to have your three witnesses testify, and then have them interrogated by the committee, or would you prefer to have them interrogated at the completion of their testimony?

Mr. MONTAGUE. We have no particular preference; whichever the committee would like to do. It might be more convenient for the committee if all three of them told their story and you would be in a better position.

Mr. METCALF. I note that as you outlined it, the story is integrated, so that there are 3 parts to it, and it might be well if we get all 3.

Mr. MONTAGUE. We will hold the witnesses available for questioning.

Mr. METCALF. So, without objection, we will call the next witness and at the conclusion of their testimony, all three will come forward for integration.

Mr. MONTAGUE. The next witness is Robert F. Wilson, manager of safety for the Oliver Iron Mining Division of the United States Steel Corp., which is the largest operator in the Lake Superior district.

Mr. Robert Wilson.

Mr. METCALF. I note that you, too, have a prepared statement, so will you take your place, and the reporter has a copy of it. Proceed as you wish.

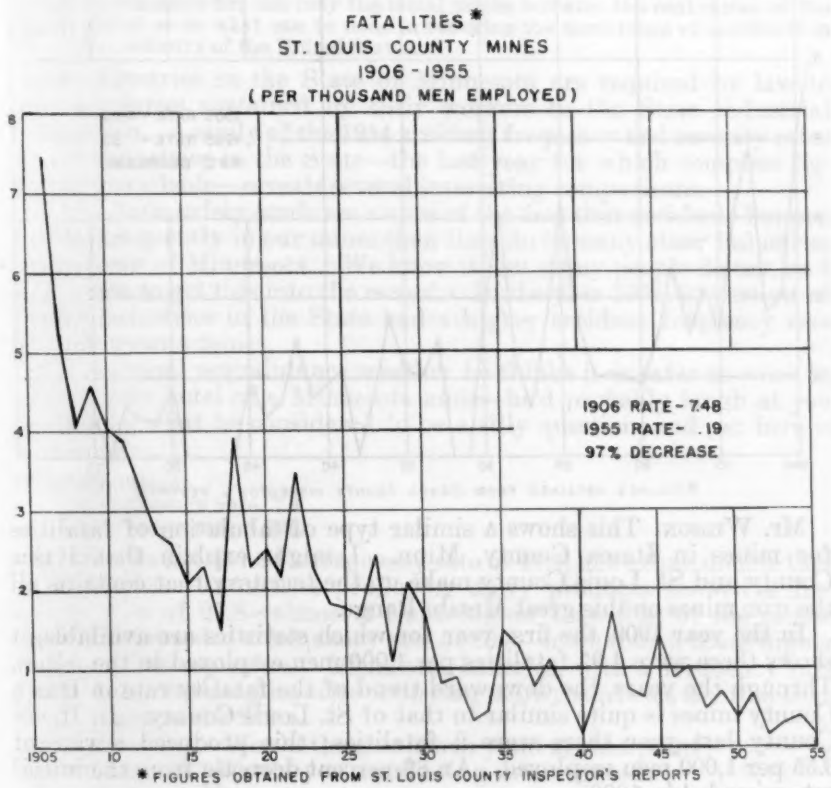
STATEMENT OF ROBERT F. WILSON, MANAGER, SAFETY AND COMPENSATION, OLIVER IRON MINING DIVISION, UNITED STATES STEEL CORP., DULUTH, MINN.

Mr. WILSON. Chairman Metcalf and members of the House Subcommittee on Mine Safety, I am pleased to appear before you this morning to give information relative to safety in the ore mines of Minnesota. This information is chiefly in the form of statistics gathered from reliable sources.

For your consideration, I would like to direct your attention to chart No. 1 which is attached to this report.

(The chart No. 1 referred to follows:)

CHART NO. 1



Mr. WILSON. Here you will note is a tabulation of fatalities in the mines of St. Louis County, Minn. These figures are taken directly from the St. Louis County Mine Inspectors' annual reports and show the number of fatal injuries per 1,000 men employed.

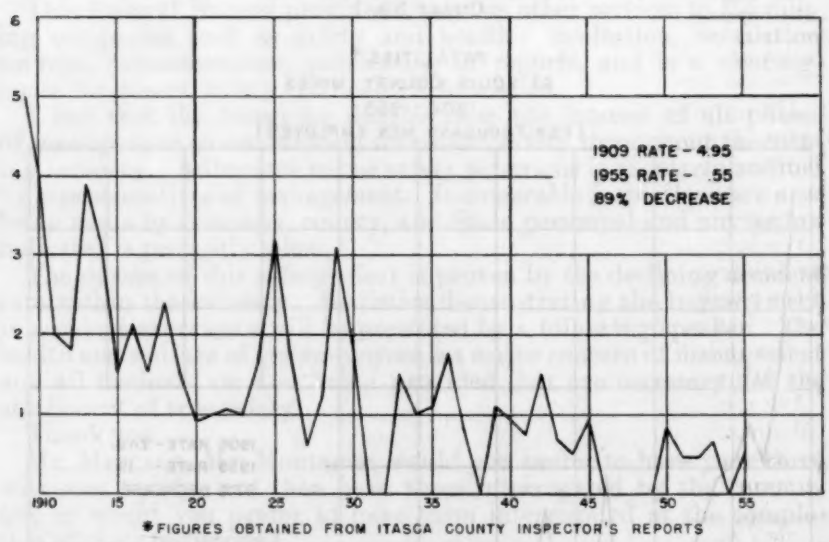
In the year 1906 there was 7.48 fatalities per 1,000 men employed in St. Louis County mines. This rate has steadily declined through the years and it is heartening to note that last year there were 0.19 fatalities per 1,000 miners. This represents a 97-percent decrease. Certainly here is real progress in mine safety.

The St. Louis County Mine Inspectors' report for 1955 also tells us there were 121 mines operating during the year and that they produced almost 50 million tons of iron ore. Simple arithmetic gives us the figure of 1 fatality per 25 million tons of ore produced.

Next I would like to direct your attention to chart No. 2.

(The chart No. 2 referred to follows:)

CHART NO. 2



Mr. WILSON. This shows a similar type of tabulation of fatalities for mines in Itasca County, Minn. I might explain that Itasca County and St. Louis County make up the territory that contains all the iron mines on this great Mesabi Range.

In the year 1909, the first year for which statistics are available, it shows there were 4.95 fatalities per 1,000 men employed in the mines. Through the years, the downward trend of the fatality rate in Itasca County mines is quite similar to that of St. Louis County. In Itasca County last year there were 2 fatalities; this produced a rate of 0.55 per 1,000 men employed. An 89-percent decrease from the initial rate recorded in 1909.

Itasca County had 47 mines operating last year and they produced approximately 16,292,831 tons of ore, an average of 8,146,415 tons per fatal accident.

In 1950 there was published a very informative piece of literature by the United States Bureau of Mines. It was a 102-page document titled, "Safety in the Mining Industry." This Bulletin No. 481 gives considerable information on accidents in the coal mining, metal, nonmetal, quarrying and petroleum industries. I have taken several excerpts from this bulletin and would like to have them recorded in the minutes of this meeting. These excerpts are found on attached sheet No. 3, and I quote from this particular bulletin several excerpts:

Some of the safety records achieved by mines in the Lake Superior region equal, and a few surpass, those of far less hazardous industries.

* * * * * * *

These records show clearly that, with concerted effort on the part of employees and officials and strict adherence to recognized safe practices, mining can be done without the relatively large loss of life that characterized it in the past. Open-pit mining in which millions of tons of material are handled without lost-time accidents is a far cry from the experience record of this typ of mining of 20 or more years ago and clearly indicates what can be done when company officials and employees are safety-minded and work harmoniously toward a common goal.

* * * * * * *

The Health and Safety Division of the Bureau of Mines looks largely to the Lake Superior region for information as to safety organizations, procedures, and results as examples for not only the metal mines but also the coal mines of the United States as to what can be done in reducing the occurrence of accidents in the mining industry of the United States.

All industries in the State of Minnesota are required by law to report injuries sustained by their workers to the State industrial commission. A study of the 1954 accident frequency and severity rates for all industries in the State—the last year for which complete figures are available—reveals several interesting comparisons.

We in mine safety work are aware of the fact that accidents happen far less frequently in our mines than they do in many other industries in the State of Minnesota. We know it, but many people do not, so I would like to get this into the record. In the year 1954, 83 percent of all the industries in the State had a higher accident frequency rate than Minnesota mines.

Ask a casual acquaintance whether he thinks it is safer to work in a Minnesota hotel of a Minnesota mine—he'd probably laugh at you for asking what he considered to be a silly question, and yet here is the record:

Minnesota mines:
1954 frequency rate, 7.4.
1954 severity rate, 1,720.

Minnesota hotels had a frequency rate of 17.4, more than double that of the mines. Industries producing dairy products showed a frequency rate of 27.8—almost 4 times higher than that of the mines. Canneries recorded a frequency rate of 23.3—more than 3 times higher than our iron-ore mines. Minnesota bakeries, with a frequency rate of 15.9, had disabling injuries occurring more than twice as often than in the mines of the State.

Mr. LANDRUM. Would the gentleman yield at that point?

Mr. METCALF. Would you mind being interrogated?

Mr. WILSON. No.

Mr. LANDRUM. Would you explain for me—I guess the others know it—the exact meaning of "Frequency rate, 7.4"? Is that 7.4 per 1,000?

Mr. WILSON. I do that just a little later.

Mr. LANDRUM. I am sorry. Do you do the same with the severity rate?

Mr. WILSON. Yes.

Mr. LANDRUM. All right.

Mr. WILSON. The 1954 severity rate of 1,720, or 1,720 for Minnesota mines, was exceeded by the concrete products, construction, dairy products, shipbuilding, and public-utility industries in the State.

I am sure you will agree that although we in the mining industry are not satisfied with our safety records, they are records that we are not ashamed of, and to quote again from the United States Bureau of Mines Bulletin No. 481:

These records show clearly that, with concerted effort on the part of employees and officials and strict adherence to recognized safe practices, mining can be done without the relatively large loss of life that characterized it in the past.

The Minnesota Industrial Commission's reports showing the 1954 and 1953 accident experience for all Minnesota industries are attached and made a part of this presentation.

Perhaps it should have been stated earlier that all injuries are recorded according to rules stated in the American Standard Association Code Z 16.1. In this code, the frequency rate is defined as the number of disabling or lost-time injuries per million man-hours. Since January 1, 1955, the severity rate has been expressed as the total number of days lost or charged per million man-hours worked. Prior to that date it was expressed as the total days lost or charged per 1,000 man-hours. In quoting severity rates of years prior to 1955, these rates have been converted to conform to the new method.

Coal mines in the United States have two hazards that are rarely encountered in metal mines, namely, explosive gas and explosive dust. But iron mines and coal mines do have many hazards in common, such as falls of rock or ground, electricty, truck haulage, underground haulage, movement of mined material by conveyor belts, explosives, and many others. The following comparison of accident rates of Minnesota iron mines with rates of all coal mines in the United States is of interest:

	Minnesota mines, frequency rate	United States, all coal mines, frequency rate
1954	7.4	50.84
1955	6.9	49.86

In this comparison, you will note that disabling injuries are approximately seven times more frequent in coal mines than in our iron mines of Minnesota. In regard to fatal injuries, we find the following:

	Minnesota mines, fatality rate per 1,000,000 long tons of ore	All United States coal mines, fatality rate per 1,000,000 short tons of coal
1954	0.10	0.94
1955	.07	.84

From these figures it is obvious that in the year 1954 the fatality rate based on tons mined was more than 9 times higher in United States coal mines than in Minnesota iron ore mines, and in 1955 the rate was 12 times higher. It should be noted that iron ore tonnages are in long tons while coal tonnages are shown in short tons.

A study of fatal work accident figures for 1955 reveals the following. These are fatalities listed by industries for 1955:

Work accidents—1955

Industry fatalities:	
Trade	1,400
Manufacturing	2,100
Public utilities	200
Service	2,300
Transportation	1,300
Agriculture	3,700
Construction	2,400
Mining, quarrying, oil and gas wells	800
All industries	14,200

Of the 800 fatalities recorded for the entire mining, quarrying, oil and gas well industries, approximately 100 deaths occurred in metal mines. Of these 100 deaths, 9 of them occurred in the metal mines of the Lake Superior district, and of those 9 deaths, 4 of them were in Minnesota mines. It should be of interest to note that last year 3,600 more farmers were killed at work than metal miners.

On the matter of safety awards for outstanding accident prevention records, the metal mines of the Lake Superior district have received 150 Joseph A. Holmes "Certificates of Honor" during the past 4 years, and have captured 42 of the 62 eligible "Sentinels of Safety" trophies since they were first awarded in 1925 by the United States Bureau of Mines.

In conclusion, I would like to cite an example of what can be accomplished when union and management work together to reduce accidents. For the period of 7 years—1942–48—prior to the time the management of my company, the Oliver Iron Mining Division, and the union agreed to a 100-percent eye protection program, our records show a total of 23,008 days lost or charged due to eye injuries.

In the 7 years—1949–55—following this agreement and inauguration of an eye conservation program requiring every worker on the job to wear safety glasses, our records show a total of 1,891 days lost or charged. This represents a drop of 92 percent over the earlier period.

This drastic reduction of injuries to the workers' most priceless possession, his sight, clearly demonstrates that tremendous progress can be made in the field of safety when union and management cooperate, as they have in the iron ore industry, to attack a common foe—mine accidents.

Mr. METCALF. Thank you, Mr. Wilson, for a very informative statement. Subject to the difficulties of printing, the two charts that were mentioned during the course of the testimony, unless there is objection, will be included in the record, and the information "Accident Experience in Minnesota Industries" that is contained at the end of the statement will also be inserted in the record at the conclusion of your statement.

(The tabulations referred to follow:)

Accident experience, Minnesota industries[1]—Continued

1953

Industry	Number of firms	Man-hours	Lost-time accidents	Lost days	Frequency[2]	Severity[3]
Aircraft, airports	8	6,347,880	136	985	21.4	160
Automobile manufacturing	1	4,044,175	6	9,515	1.5	2,350
Bakeries	31	7,234,120	115	2,749	15.9	380
Breweries, bottlers	23	7,126,289	162	4,718	22.7	660
Canneries	23	8,191,334	252	12,012	30.8	1,470
Cement, clay products	8	1,955,355	59	1,321	30.2	680
Chemicals	13	2,441,507	45	705	18.4	290
Coal and ice	11	683,370	17	272	24.9	400
Cold storage, warehouse	8	1,626,059	46	444	28.3	270
Communications	5	19,915,515	26	3,566	1.3	180
Concrete products	7	754,259	36	9,415	47.7	12,480
Construction	113	18,211,264	527	55,038	28.9	3,020
Counties	81	10,960,237	208	30,774	19.0	2,810
Dairy products	60	15,114,578	421	25,884	27.9	1,710
Flour, feed, grain	59	13,463,034	186	18,890	13.8	1,400
Food processing	61	9,948,717	155	2,540	15.6	260
Foundries	31	6,166,377	227	10,382	36.8	1,680
Garages	100	12,547,223	190	5,735	15.1	460
Hospitals	33	22,827,466	203	4,730	8.9	210
Hotels	20	7,362,853	127	3,021	17.2	410
Institutions, public	84	20,517,852	242	16,425	11.8	800
Launderers, cleaners	55	7,755,828	53	1,072	5.5	140
Lead	5	1,000,859	29	698	29.0	700
Leather	8	2,369,698	33	1,453	13.9	610
Lumber, building material	25	3,045,209	100	2,066	32.8	680
Machinery, heavy	39	30,701,647	497	18,296	16.2	600
Machinery, light	94	56,229,600	430	23,470	7.8	420
Manufacturing, unclassified	156	84,888,524	979	61,958	11.5	730
Meat processing	19	31,016,029	507	25,663	16.3	830
Mining	16	38,344,694	384	69,078	10.0	1,800
Offices	33	9,274,211	38	741	4.1	80
Paint, varnish	8	1,332,087	25	784	18.8	590
Paper containers	15	2,234,801	55	4,685	24.1	2,050
Paper pulp	10	14,868,101	103	16,433	13.0	1,100
Petroleum products	24	10,052,755	77	9,531	7.7	950
Plastics	10	1,475,129	42	4,393	28.5	2,980
Plating	3	534,859	21	191	39.3	360
Pole yards	7	898,348	92	1,065	102.4	1,190
Poultry, produce	48	6,867,962	269	3,751	39.2	550
Printing, publishing	69	25,976,334	143	10,338	5.5	400
Quarrying, stone cutting	44	4,069,081	122	29,066	30.0	7,140
Railroads	18	27,382,660	334	11,636	12.2	420
Rubber products	3	1,078,041	22	537	20.4	500
Sheet metal	41	7,391,543	134	10,480	18.1	1,420
Shipbuilding	1	155,650	13	134	83.5	860
State departments	2	16,233,362	261	36,101	16.0	2,220
Steel fabrication	27	12,654,024	188	20,802	14.9	1,640
Textiles	91	19,778,359	192	12,260	9.7	620
Theaters, amusements	14	2,160,322	34	735	15.7	340
Transportation, motor	64	16,182,879	485	45,418	30.0	2,810
Utilities, public	26	22,945,133	245	47,726	10.7	2,080
Wholesale, retail	300	90,399,022	877	28,296	9.7	310
Woodworking	68	15,008,005	344	27,382	22.9	1,820
Municipalities	15	23,882,807	607	19,551	25.4	820
Total, 1953	2,138	785,667,087	11,220	764,911	14.3	970

Accident experience, Minnesota industries[1]—Continued

1954

Industry	Number of firms	Man-hours	Lost-time accidents	Lost days	Frequency [2]	Severity [3]
Aircraft, airports	11	5,702,180	101	726	17.7	130
Automobile manufacturing	1	4,343,047	12	3,578	2.8	820
Bakeries	31	7,059,740	112	7,932	15.9	1,120
Breweries bottlers	22	7,261,743	139	2,074	19.1	290
Canneries	27	9,972,660	232	13,954	23.3	1,400
Cement, clay products	8	2,025,948	45	651	22.2	320
Chemicals	14	2,777,742	30	550	10.8	200
Coal and ice	9	528,469	8	269	15.1	510
Cold storage, warehouse	8	1,574,217	46	390	29.2	250
Communications	5	20,069,060	22	9,690	1.1	480
Concrete products	8	1,139,067	50	3,785	43.9	3,320
Construction	119	18,175,475	445	55,525	24.5	3,050
Counties	84	14,619,6 3	219	28,939	15.0	1,980
Dairy products	96	17,071,409	475	39,343	27.8	2,300
Flour feed, grain	57	13,652,810	184	12,598	13.5	920
Food processing	69	10,565,269	144	10,935	13.6	1,030
Foundries	32	5,651,165	175	3,264	31.0	580
Garages	99	11,602,410	178	9,867	15.3	850
Hospitals	39	25,704,282	229	5,626	8.9	220
Hotels	22	7,810,799	136	1,737	17.4	220
Institutions, public	99	38,907,141	317	7,683	8.1	200
Launderers, cleaners	58	7,659,765	58	671	7.6	090
Lead	4	478,6 3	18	172	37.6	360
Leather	8	2,134,337	29	850	13.6	400
Lumber, building material	26	3,2 3,548	109	5,209	33.2	1,590
Machinery, heavy	384	25,876,711	333	14,343	12.9	550
Machinery, light	96	50,716,518	346	12,914	6.8	250
Manufacturing, unclassified	164	73,558,576	788	37,418	10.7	510
Meat processing	18	29,261,482	548	29,564	18.7	1,010
Mining	18	27,012,378	200	46,467	7.4	1,720
Offices	35	12,651,018	40	294	3.2	20
Paint varnish	8	1,290,948	24	154	18.6	120
Paper containers	15	2,254,045	42	712	18.6	320
Paper and pulp	10	14,903,232	143	11,320	9.6	760
Petroleum products	27	10,119,674	94	1,777	9.3	170
Plastics	13	1,538,775	36	1,840	23.4	1,200
Plating	2	140,323	1	10	7.1	70
Pole yards	7	847,179	65	1,083	76.7	1,280
Poultry, produce	45	6,777,613	226	3,013	33.3	440
Printing, publishing	72	26,436,331	104	5,641	6.2	210
Quarrying, stone cutting	42	3,850,227	135	2,806	35.1	730
Railroads	22	28,203,244	402	31,862	14.3	1,130
Rubber products	3	1,010,042	15	74	14.9	70
Sheet metal	44	7,645,358	118	6,733	15.4	880
Shipbuilding	1	81,405	3	195	36.9	2,400
State department	2	16,843,751	177	16,530	10.5	986
Steel fabrication	27	11,637,935	171	11,499	14.7	990
Textiles	86	16,271,761	109	4,227	6.7	260
Theaters, amusement	16	2,309,162	16	291	6.9	130
Transportation, motor	67	17,165,241	409	28,232	23.8	1,640
Utilities, public	29	22,365,469	475	55,633	21.2	2,490
Wholesale, retail	307	88,729,564	820	36,867	9.2	420
Woodworking	67	14,421,752	251	14,947	17.4	1,040
Municipalities	19	27,644,618	571	36,892	20.7	1,330
Total, 1954	2,252	781,334,971	10,235	639,356	13.1	820

[1] From records of Minnesota Industrial Commission—Bureau of Accident Prevention.
[2] Frequency rate—Disabling injuries per million man-hours worked.
[3] Severity rate—Number of days lost or charged per million man-hours worked.

Mr. METCALF. The committee will be off the record.

(A short recess was taken.)

Mr. METCALF. The committee will be in order.

During the recess, I was informed that some representatives of the employee organization are here, and will be unable to be here this afternoon, and they are prepared to testify at this time, so we will interrupt your testimony, Mr. Montague, and we will hear from Mr. Joseph McDonald and Mr. Sam Swanson, to present some employee witnesses.

Mr. Sam Swanson will present the employee witnesses.

Mr. SWANSON. Thank you, Mr. Chairman.

Mr. METCALF. Will you give your name and your organization and your address, Mr. Swanson?

STATEMENT OF SAM E. SWANSON, REPRESENTATIVE FOR DISTRICT 33, UNITED STEELWORKERS OF AMERICA, AFL–CIO. HIBBING, MINN.

Mr. SWANSON. Sam Swanson, representative of the United Steelworkers of America, District 33.

Gentlemen, I have no written statement to present at this time. It was our understanding that the Subcommittee on Mine Safety was coming into our area during the period from September 4 to September 14, and we understand it was necessary to make some changes. However, it has not left us sufficient time to prepare written statements, and we would like to know if we can submit a written statement at a later date,

Mr. METCALF. That is right. Unless there is objection, the record will be kept open for you to submit any additional statements and any written statements you choose. How long do you think it will take you?

Mr. SWANSON. Well, I am not sure, but is there some rule as to the length of time that the committee allows?

Mr. METCALF. No; there isn't any rule. We would like to go forward with the preparation and publication of the record as soon as possible. However, hearings are going to be resumed in mid-September, and so it wouldn't inconvenience anyone if you were able to present your written statements or any additional testimony by, let's say, September 20.

Mr. SWANSON. Thank you, Mr. Chairman. We will try to have our written statement in by that date.

Mr. METCALF. Send it to Mr. Derrickson, and you can get together and he will tell you where to file the statement.

Mr. SWANSON. Our union also want to thank the subcommittee for coming into our area and touring the mines, and holding this hearing today.

If I can read my notes——

Mr. BLATNIK. Mr. Swanson, would you yield for just a second?

Mr. SWANSON. Yes.

Mr. BLATNIK. I would like, Mr. Chairman, the record also to show that Mr. Swanson handled, in behalf of labor, that part of the tour which we had yesterday, and we express our appreciation for the splendid tour, and the fine and cooperative manner with management in which it was possible for us in a very limited time to see the several typical types of activities in this gigantic operation.

Mr. SWANSON. And the union wants to express its appreciation to the representatives of management, as well as the Bureau of Mines, in arranging the tour of yesterday.

This 1-day tour of the mines of the Central Mesabi Range, we feel, is hardly sufficient for the subcommittee to get a true picture of the conditions that exist in the mines of Minnesota, and in district 33. We know you are going to make further tours and have further hearings,

and we have already understood and been granted the right to bring in further testimony and a written statement at that time.

The tour of the open pits, I think, was very good. I think it gave the committee a very true picture of conditions that exist in the open pits and also, the hazards of open-pit mining in the steep banks, and also the tour through the underground mine at the Albany mine gave the committee a very good idea of underground mining.

However, we would have preferred to have you make a tour of the deep mines of the Vermillion Range, because there are many conditions and situations that exist there that could not be seen in our tour yesterday.

The haulage of ore and supplies is done by motors and cars, and naturally, they have a deep shaft, which was not present in the case of the Albany mine, and, also, the type of mining is considerably different in that the Albany mine consists mostly of one seam of iron ore, with rock in the bottom or foot, and also rock in the back or the ceiling.

The deep iron-ore mines, of course, are mined by what is generally termed the subcaving method of mining. The miners drive in their drifts or slices, and then they do what they call "rob the back," and pull this ore into the raises, which are connected with chutes below.

Also, because they are deep mines, they have problems of ventilation and water removal which were not present in the mine that we toured yesterday. So the union feels that the committee should tour one of our deep underground mines, if possible, because we feel that would give them a truer picture of the actual situation that exists.

Mr. METCALF. Mr. Swanson, I wonder if you would yield for just a moment.

Mr. SWANSON. Yes.

Mr. METCALF. The subcommittee plans to tour some deep underground copper mines in the Butte, Mont., area where there are extensive, deep, underground copper operations; and have you any familiarity or could you tell the committee whether or not those would be representative of the type of mining that we would find over in Ely, or in the Vermillion Range that you were talking about?

Mr. SWANSON. I never worked in any copper mines. The only information I have on them is from men who have worked in copper mines, and while in some situations there are similar conditions, in other cases they are entirely different.

Mr. METCALF. Obviously, of course, we can't tour and visit every mine, and so, it was the hope of the committee to find representative mining areas. The open pit and the type of mine that we visited yesterday is representative of this area, and in some other area we will visit deeper mines, and I assure you, mines with conditions such as you have described.

I hope that you can, or someone in one of your organizations further along the line, can assist us so we can find out how they compare with the mines over here that we should have had an opportunity to visit.

Mr. SWANSON. Thank you.

Mr. METCALF. Mr. Landrum?

Mr. LANDRUM. In these mines which you say have different problems than that one we visited yesterday over at the Albany Mine, do you also have the same sort of efficient, high-grade safety program and

cooperation between union and management that has been described to us here this morning, and that we saw yesterday?

Mr. SWANSON. There has always been a fine spirit of cooperation between the officers and safety committees of our unions and the representatives of management.

Mr. LANDRUM. So in those mines we didn't see, you are conducting an outstanding safety program such as this we have heard about here this morning and saw yesterday?

Mr. SWANSON. We are continually striving to do that.

Mr. LANDRUM. You will be able to relate in these prepared statements some of the problems that occur which are different from those that we saw in the mine yesterday?

Mr. SWANSON. We are going to try to do just that.

Mr. LANDRUM. I believe that is about as deep as I want to travel—that one yesterday. I think with what I learned and what he can put on paper, I am going to stand.

Mr. METCALF. I am sorry for the interruptions. Continue, Mr. Swanson.

Mr. SWANSON. Well, that is all right. I like to get a break myself.

Some years ago the members of the Steelworkers Union in conferences with employees of the various iron ore and copper mines in upper Michigan, northern Wisconsin, and Minnesota, met and a resolution was adopted that we favor a uniform Federal code of safety practices in metal mines.

We also at that time adopted a resolution that we wanted the State laws concerning county mine inspectors improved, and I probably should point out at this time that the practice of selecting mine inspectors varies in upper Michigan and Minnesota.

I understand in Michigan that it is the practice, at least in some areas, to elect the county mine inspector. In Minnesota they are selected by the members of the county board. The union proposed some amendments or changes to the law governing the county mine inspectors and the law was amended to provide an additional or an assistant county mine inspector in the county of St. Louis, and also to provide some additional authority for the county mine inspectors which the union felt was needed.

This has improved the situation somewhat. However, the union has never repealed its action supporting a uniform code in the metal mines, and feels that this could best be achieved by having some Federal organization such as the Bureau of Mines or other appropriate Government agency supervise these codes and see that they are properly carried out.

Now, I have several members of various safety committees in the mines present here, and I would like to call on a few of them because they have definite ideas of their own as to certain improvements that can be made, and also ideas. We don't want to make this a grievance meeting, but on the other hand, I do believe if they have some complaint that could bring out a point in support of their feeling, it can be best done by individuals.

Mr. METCALF. That is right, Mr. Swanson. We don't want to make it a grievance meeting, but if there are instances that relate to mine safety that these men know about, and can testify to, that is the purpose of the committee, to be here to listen to that.

Mr. SWANSON. Yes.

I don't know which one of you boys wants to be first on the program. How about you, Fred?

This is Wilfred Brobin of Ely, an employee of the Pioneer Mine at Ely, who has been a member of the safety committee for a number of years.

Mr. METCALF. Mr. Brobin, will you come forward and maybe you can sit alongside of Mr. Swanson at the witness stand there.

STATEMENT OF WILFRED BROBIN, ELY, MINN., SAFETY COMMITTEE, LOCAL 1664, UNITED STEELWORKERS OF AMERICA, AFL–CIO

Mr. METCALF. Go ahead, Mr. Brobin. We are glad to have you.

Mr. BROBIN. I am Wilfred Brobin. I feel that if this safety was run through the Federal Government—not that I am finding fault with the way it has been run through the State—we would have more uniformity.

There is also a chance of improving our safety record. In some of it we may have got by on luck, and then again, there might be carelessness on management or carelessness on employees.

But if there was a definite set of rules, then it could be tied down, probably after the investigation is through, to one company's rules which seem to be better, and probably their safety record is better, and that way I believe it would help a lot when you try to enforce or pass a law.

Then you would be able to lay your plans accordingly so that you would get the best of the laws. As it is now, each company has their own safety. They probably think they have the best. We work in a different outfit; we think we have the best.

If it was thrashed out, probably there are good points for both parties, and that way we could run it a little safer and better.

I believe that is all I have.

Mr. METCALF. Do you have any questions, Mr. Landrum?

Mr. SWANSON. I might mention that Mr. Brobin has been a miner for how long?

Mr. BROBIN. I have worked in a mine 23 years underground. It would be 23 this fall. I will take that back.

Mr. SWANSON. He has a considerable amount of experience.

Mr. BLATNIK. Off the record.

(Discussion off the record.)

Mr. BROBIN. I have been fortunate. I haven't had a lost-time accident in the mine. Probably due to alertness, and safety on management, too, but I have had a few close ones, and I have got hit a few times. I have been that fortunate that I haven't had a lost-time accident.

Mr. METCALF. That is very good. It shows what can be done, as has been brought out by other testimony, by alertness on the part of the employee as well as proper conditions in the employer department. Do you have any questions, Mr. Landrum?

Mr. LANDRUM. We heard some statistics here this morning showing that most of the accidents, about 90 percent of the lost-time accidents that occur now, occur as a result of the human error. Woud you agree with that, or would you say it was as a result of a lack of rules and regulations?

Mr. BROBIN. I wouldn't say that. I say accidents are caused through lack of foresight by management and by labor. After it is all over you say, "Well, if I stayed home, it wouldn't have happened. If I had been over there, it wouldn't have happened."

But it is lack of foresight. Accidents can be prevented, but no man turns around and gets hurt willfully or intentionally, and draws—until this new contract it was $40 a week—where he is turning around and making $150 a week.

After all, everybody goes down there for the dollars they are getting, and they don't willfully go down and get hurt or get maimed or anything else.

Mr. LANDRUM. Would you say that new rules, additional rules, or enlarged enforcement of the present rules would eliminate the accidents? We saw here less than 1 fatality, I believe, per 25 million tons produced in 1 set of figures. Would you say additional rules or enlarged enforcement could eliminate that low a factor?

Mr. BROBIN. Yes; I believe I could honestly say that; and also they are starting it with the Oliver Co. in Ely, talking safety. Its constant talking safety, constant safety.

With that and a few changes in rules, a lot of times as it has been run, the company figures theirs is the safest way. The union also thinks it is the safest way. Then they have to get together and decide which. But there is no law saying it is going to be this way.

Mr. LANDRUM. If we had a law—conceding that we need it—or not conceding, but say we do need it, and that we have the Federal law, isn't the end result going to come down to cooperation between the workers and the employers, such as you have exhibited here to us before you can have any real safety program?

Mr. BROBIN. Oh, yes. You will never get safety unless there is cooperation by both parties, employer and employee. Does that answer your question?

Mr. LANDRUM. Partly. I think you are leaning toward a Federal safety code, in order to bring about a general safety program, or a uniform safety program throughout the United States, whether it is iron-ore mining, or coal mining, or quarrying, or whatever it might be.

Mr. BROBIN. Of course, there would have to be some changes there. You have some open pits. Some of the rules and regulations wouldn't mean anything to underground.

You have shallow underground, and their rules and regulations. It would have to pertain to the depth of deep mines and the types of materials. In iron ore some is soft, some is harder.

Mr. LANDRUM. It does occur to me that you people have attained the most marvelous results I have ever seen in a safety program anywhere. I think you ought to be commended for it, you and management. That is all I have.

Mr. METCALF. Mr. Blatnik?

Mr. BLATNIK. No questions.

Mr. METCALF. Mr. Brobin, you are a member of the safety committee in local 1664?

Mr. BROBIN. Yes.

Mr. METCALF. Do you think that in this planning that you mentioned that it would help if there were a Federal reporting system of mine accidents, an interchange of information, so that if you heard

of an accident in some other area that was caused by carelessness, or lack of proper equipment, that perhaps you, in your safety program, and as a member of the safety committee, could inform the members of your union about it? Do you think that would be helpful?

Mr. BROBIN. Oh, yes. It would pay to have the proper information.

Mr. METCALF. One of the principal provisions in the legislation that is before the committee is for an annual inspection of mines by a Federal Mine Inspector, and the dissemination of information, spreading of such information as he obtains to all cooperating agencies, whether they are the State agencies or the safety councils and so forth.

Don't you think that would be helpful to you in your activity as a member of the safety committee, to know what has happened as a result of an investigation of an accident in Alabama, or Arizona? You might be able to prevent an accident here as a result of that information.

Mr. BROBIN. Oh, yes. There would be a lot of foresight, then. You would try to be on the alert for it.

Mr. METCALF. That would bring about the foresight that you mentioned.

None of this legislation that we are considering has Federal control or regulation. That is being left to the States, and the local committees. This is more a matter of Federal inspection and coordination and dissemination of information, and don't you think that perhaps that would be a sufficient step, so that we could see how such would work if we passed any legislation at all?

Mr. BROBIN. No; I don't. I don't agree with you on that, for the simple reason that some States would be more lax. We will say it is a State that doesn't go into much mining. The State of Minnesota is a mining State.

Take any small State, we will say, where one little corner of it is in mining. They are all farming and everything else. That State would be lax, and they would have to be governed by basic rules from the Federal Government, because if one State is all industry, not in mining, the rules would never be carried out. They may be lax on that.

Then probably they would shine it up and spruce it up like they did years ago when they used to have a safety committee come into the mines and they would say, "Well, the safety committee is coming Monday. Clean her up." It is cleaned up. These are true facts.

I have been there long enough to know. The same thing would hapyen if it was controlled by the State. "The inspector is coming through here. All right, shine her up," and the next 364 days let her go sloppy.

Mr. METCALF. Does that conclude your statement?

Mr. BROBIN. Yes.

Mr. METCALF. Thank you, Mr. Brobin. Thank you, Mr. Swanson, and will you call your next witness?

Mr. SWANSON. Matt, we have got another safety committee member here from one of the deep mines in the range, Matt Banavetz.

Mr. METCALF. We are glad to have you with us, Mr. Banavetz. Will you give your name?

STATEMENT OF MATT BANAVETZ, ELY, MINN., SAFETY COMMITTEE, LOCAL 2445, UNITED STEELWORKERS OF AMERICA, AFL–CIO

Mr. BANAVETZ. Matt Banavetz. I work for Vermillion Mining Co. at the Zenith mine operated by Pickands Mather at Ely.

The only thing that I have to bring up is that we have a good safety record in 1954 and 1955, and part of 1956 up to 3 months in 1956.

I am chairman of the employees' safety committee, and I stuck my neck out a good many times at the start because I felt that a safety record is made by all of the men working, and if you can impress on their minds about the little things, watch out for the little things, the big things will take care of themselves. They will find the big things themselves because if they are safety-minded about little things, eventually they won't pass up any big things, and they started a practice of mining down there whereby they have 3 men in a contract instead of having 2; they have 3 men, and sometimes they change to 5 men in a contract.

When they are drifting there are 2 men, and when caving, the most dangerous part of the mining, they have 1 man working alone. We tried to not have that start, but well, they tried it. They said they were going to try it. In the meantime, we did have a good record. I must say that. But we had a fatality in 1956, and we again asked them to discontinue one man working alone. The man was alone when he was killed.

Nobody knows just exactly what did happen, but we haven't got anywhere with that recommendation that we gave. They still don't want to.

As soon as they turned it down and didn't change that system our safety record went down, and I haven't got the heart to tell the men to be safety conscious when they won't cut out the most dangerous part. I haven't got the heart to tell them to be safety conscious any more after that.

Mr. BLATNIK. Would the gentleman yield there?

Mr. Banavetz, you raise a very important point there on this matter of one man working alone. In the operation we saw in Albany, the underground operation, we saw and were told that elsewhere they had two men working to each contract.

Do you have a different system in your underground mine?

Mr. BANAVETZ. Yes.

Mr. BLATNIK. Would you elaborate? I am sure the committee would be interested in that.

Mr. BANAVETZ. When they are running a drift, they have 2 men working together running a drift, and when they start caving the drift back, then 1 man caves the drift back alone. He is alone caving the drift back, and the other two drift again.

We tried to explain to them how many times it happens that when there are two men in the place, you avoid accidents and serious accidents so many times, but it seems as though they can't see it. Like when a man is barring, maybe chuncks come down from the side, well, he is just watching that one particular chunck that he is barring because that is the one he is interested in.

If his partner is close there, he is looking at the whole thing. He probably will see a chunck up above that is ready to come down and call his attention to it, or maybe while barring, one chunck, another one, may come down and probably hit him in the leg just enough to knock him down. His partner will grab him and pull him away.

If his partner wasn't there, the dirt comes down after that and they are buried. It happens so many times, but we feel as though if they cut out that one man working alone, I think we could still build a safety record that would better this one that we had this last time.

I am sure we could because I never saw a group of safety-minded people, men, like there were in the Zenith mine until we had that fatality. Now you don't dare mention safety to them.

Is there anything this committee could do about that?

Mr. SWANSON. They are conducting this hearing for the purpose of getting the information that will be used in determining their action on pending legislation concerning mine safety.

Matt, can I ask you how long you have been a member of the safety committee and an officer of that union?

Mr. BANAVETZ. I have been on that safety committee 2½, pretty near 3 years.

Mr. METCALF. Mr. Swanson and Mr. Banavetz, will you speak up a little bit so the people in the audience can hear you?

Mr. SWANSON. I am sorry. I asked Mr. Banavetz how long he had been on the safety committee and he tells me approximately 3 years.

Mr. BANAVETZ. About 3 years on the safety committee.

Mr. METCALF. Mr. Banavetz, I don't know what the committee can do about a requirement such as you have suggested. One of the things that the committee is interested in, however, is testimony of the nature that you have just given, that one man working alone creates an unsafe condition, and also a very much more dangerous situation than working in pairs, and it may be that regulations can be written, or it may be that your very suggestion will be helpful.

All these matters that you and your colleagues and your friends and other members of the unions in other places in areas in the United States bring up will be in the record and will be taken into consideration when this legislation is considered.

Mr. Landrum?

Mr. LANDRUM. Is this instance you describe an isolated one that is just applicable to this particular mine, or is it general throughout the industry?

Mr. BANAVETZ. No; it isn't general through the mines. It is just this one particular mine that they are doing that. There is just one mine that I know of where they have that practice.

Mr. SWANSON. In Minnesota.

Mr. BANAVETZ. They just started it about a year and a half ago, I guess.

Mr. LANDRUM. That is all.

Mr. METCALF. Thank you very much, Mr. Banavetz.

Call your next witness, Mr. Swanson.

Mr. SWANSON. Do you want to say something?

This is Waino Maki. He also works in the same mine where Mr. Banavetz works, and is a former officer.

Mr. METCALF. You are from Ely, and a member of the safety committee of the local 2445?

STATEMENT OF WAINO MAKI, ELY, MINN., SAFETY COMMITTEE, LOCAL 2445, UNITED STEELWORKERS OF AMERICA, AFL–CIO

Mr. MAKI. No; I am not a member of the safety committee at the present time, but I am very much interested, and I have been a miner for 20 years. I just wanted to elaborate a little bit on Mr. Banavetz' testimony to the effect that management has always insisted that whenever a man is to work alone, he is to get help, which is very good, you know, but most of the time that he isn't available, and a lot of men will say, "Let's take a chance today. Maybe we can get by."

They will maybe bar, or do some blasting or something, that isn't going to be acording to safety rules. So I think in this, that if the two men were working together, and it was insisted upon that there was no practice, it would eliminate that much of a chance for injury and loss of life.

Then, again, when there is a bunch of men working together, it is going to cause a little friction sometimes, because you are going to say, "Well, why do you have to be always coming to get me to help you? Why don't you get somebody else?" Pretty soon you say, "Well, I will let it go by this time and try to do it myself," and that way you are letting yourself open for an accident.

That is all I can add to it. If there are any questions, I would be glad to answer them.

Mr. METCALF. That is all that you have?

Mr. MAKI. Yes.

Mr. METCALF. Mr. Landrum?

Mr. LANDRUM. No questions.

Mr. BLATNIK. No questions.

Mr. METCALF. Thank you very much for your testimony.

Now, Mr. Swanson, again.

Mr. SWANSON. I see one more officer of the underground mines, Louis Arko, of the Mesabi Range. While you are here, let us hear from you.

This is Louis Arko, president of local 5311. That is at the Leonodas mine at Eveleth being operation by the North Range Mining Co.

Mr. METCALF. He lives at Gilbert?

Mr. SWANSON. He lives at Gilbert. The hometown residence is the one that is after the name on that list.

Mr. METCALF. Yes. All right, Mr. Arko, we are glad to have you.

STATEMENT OF LOUIS ARKO, GILBERT, MINN., PRESIDENT, LOCAL 5311, EVELETH, MINN., UNITED STEELWORKERS OF AMERICA, AFL–CIO

Mr. ARKO. We have a different type of mining than these other underground mines. Ours is what they call a block-caving system, and to me that is kind of a rattrap. I don't care too much for it, but I wanted the county mine inspector to come over there after I came over here. I didn't know this meeting was going on, but I wanted him to come over there.

Mr. METCALF. What kind of a complaint did you have about this block-caving system? Mr. Arko, we are going to see a block-caving system in Butte mines. We will see a rather extensive operation

called the Kelley shaft there which is block caving in the middle of next month, so I know it would be helpful to have your observations on it when the committee goes out and inspects that type of a mining operation.

Mr. ARKO. Well, in our mine we are right now in what they call the No. 3 block. We have got a block on each side of us. Most of these guys don't know what a block is, but you rob all the ore on each side. Now, we are in between, getting what is left. It is just teetering. We don't know which way it is going to go.

We are up in there working. I worked right in there, and we had a long-hole drill at the top. We drilled 50-foot holes. So that is all broke up there, and we go in the little 5-by-5 mills, there is about 7 feet of pillar from our drift to the one up above we drill in, and we are in there what they call belling out a mill.

Well, after you get a little bond in there it is about 12 feet across, but there is only 7 feet of solid dirt above us. They want us to go in and drill that, and they then have a guy scraping underneath our feet. The only escape we have got is coming down the hole. They have got one scraping underneath us, and one scraping above us.

We got big chunks coming down about 7 feet away from us. That is going to come through that 7 feet, and we got no way of getting out of there. So we refused to work in there, so they quit that guy scraping under us now.

Mr. BLATNIK. Mr. Arko, for the record, what company operates the mine?

Mr. ARKO. North Range Mining Co., with head offices in Negaunce, Mich. North Range Mining Co.

There is a drift right next to us about 150 feet long, and a crew working off of that caving back, the old drift, in the No. 2 block. But Monday night the crew refused to go to work in there. They said it was too dangerous because the doorway was closed.

That was the front part of the drift where you went in, and there was 14 feet of drift where there were no posts that were solid that were in there. They are all broken. There is a lot of side push. They keep digging the bottom of the dirt out.

It is supposed to be an 8-foot drift, and actually it was 14 in the center. They dig it right down and get all the dirt they can.

Mr. LANDRUM. You have the right to refuse to work in there in your grievance procedure with the company, don't you?

Mr. ARKO. Yes. He refused and the foreman told them to fix it up. They repaired it in a day and a half and they are back in there. The timber won't hold it. The timber they put in the other day is broken already.

Mr. LANDRUM. You are relating here more susceptible to local agreement and understanding and working out of rules than it would be to national legislation?

Mr. ARKO. Yes.

Mr. SWANSON. I believe that is correct.

Mr. ARKO. Yes. That is correct.

Mr. SWANSON. You see, Mr. Arko actually came here today because he was looking for the county mine inspector, and the county mine inspector happened to be at the hearing, and has promised to go down and look at the situation this afternoon. However, while he was here, I thought it might interest the committee to hear Mr. Arko.

Mr. LANDRUM. It does interest me. I didn't mean my question to infer a lack of interest. All this information is interesting to me, as a matter of fact. It is new to me.

Mr. METCALF. Here is an alleged actual violation of a safety regulation.

Mr. ARKO. Yes.

Mr. SWANSON. So the miners feel.

Mr. METCALF. Do you have anything?

Mr. BLATNIK. That is all.

Mr. LANDRUM. That is all.

Mr. METCALF. Thank you Mr. Arko. I think you have made a real contribution to the committee.

Mr. SWANSON. I would like to call on some of the men who work in the open pits. Mr. Pappone, will you come forward?

Henry Pappone is president of the largest local in this area here in Virginia, the Oliver operations, which consist of open-pit and plant operations. The Oliver is not operating any underground areas in the area at the present time.

Mr. METCALF. Will you speak up a little bit?

Mr. SWANSON. Oliver is not operating any underground mines in this immediate area.

Mr. PAPPONE. You told me to speak up?

Mr. MELCALF. I meant for Mr. Swanson to speak up.

Mr. PAPPONE. I thought you were addressing me.

Mr. METCALF. No.

STATEMENT OF HENRY PAPPONE, VIRGINIA, MINN., PRESIDENT AND SAFETY COMMITTEE, LOCAL 1938, UNITED STEELWORKERS OF AMERICA, AFL–CIO

Mr. PAPPONE. I have never been known as the strong, silent type. Otherwise I would never be president of a local union. I thought you were addressing me.

Mr. METCALF. I know that a president of a local union has to speak up just like a Congressman does.

Mr. PAPPONE. You have got to make some noise.

Actually, I didn't come here with any prepared statement of any kind, but as they say, the quickest way to get to something or someone is sometimes through their stomach, and since I have been wined and dined last night, I just feel as though I have to say something at this meeting.

Actually, there are about three things that I think would be a constructive criticism toward safety in the open-pit mines. I will say that the Oliver, which I have worked for 20 years, has, I think, a very good safety program. They have quite a few people working in it, and spend a lot of money on it, and I think we always do have a darn good safety record.

However, setting a safety record, even though it may be very good, when a person's life is gone, to him that is the only life he had, and it is very important to his family.

Now, we are all here to prevent losing of lives, so our record could really go to pot if at some time or another something should happen. I do remember in the Mesabi Mountain pits when about a million tons

of lean ore came down over a steep rock bank which slid right down into where two track gangs had been working there previous to that.

I think it would be fair to say there would be about 30 men there who had just vacated the place. Not too long ago we had another slide in the Rouchleau mine which was very close to the shovel, and quite a bit of material came down also at that time.

I do not know if the State code has any law or not on the height of the bank, and the size of the bench. By that I mean if you have a good bench, you have a pretty good catch basin in that case. In case anything comes down, it gets caught on the next bench rather than coming all the way down to where the men may be.

I know that it is possible that maybe certain operations would not be open or too extensive if they had to do a lot of stripping, if it did not pay. Although I am interested in being employed, we also have to think of the idea that possibly you can get killed.

Now, those operations, before they are opened up, are usually diamond drilled, I believe, on 100-foot square sections, or something of that type, so they do know before they go down where the ore is.

I would say I have seen open-pit mines; I have worked in them. I have worked also in underground. At present, I am working in the shops, and go out in the field or the mines as a welder.

Some of these banks are quite high, and the water can get behind them, and I do know that getting rid of water is really a problem. I realize that also, but water can cause slides, getting behind seams or between rock.

I think that more care should be taken in opening operations of the mines that it would be wide enough in order to make what is considered a right height bank and the right size catch benches or basin or whatever you call them in order to catch material that may come loose beyond anybody's expectations or beyond anything they could do about it.

An accident is usually something that happens that is unforeseen. I know that men can be careless, and the company can be careless, and like I said, I do know, at least of late, that the boys have become more safety conscious in the last few years than they ever have in the past, because as Mr. Brobin said earlier, we all knew—and I used to work on the drills in the pit and a lot of other jobs around the mine—we all knew when the safety committee was coming, and the foremen usually on that day would make sure that things that were around that shouldn't have been around, such as mushroom head tools, and a few other things, were put away or sent into the shop, or at least hidden.

That isn't a proper way to expect anything. They should come when nobody expects it, as the thing is being done every day. That, of course, in the Army or anyplace else, is the way they should do it.

Another thing, I agree with the gentleman from the PM mines, that I don't think a man should be working alone anywhere. Of course, I realize there is a possibility that 2 could get killed instead of 1, but there is a lot of times that another man could help another man from getting killed with 2 heads there instead of 1.

I think that should hold true in the open-pit-mine operations as well as the underground. I don't think a man should be left alone for any length of time, and we do have that occasion in the mines and around shop areas and in surface mines.

Also, we had a near fatal accident in one of our plants, the Pilotac plant, which is dealing in taconite at present. I don't think there is enough precaution taken by the people that do the work, plus the foremen in charge, on the proper scaffolding in going up into high places to do any repairing or welding or anything they may be doing.

The company does have proper scaffolding, but no one seems to take the time to use it in order to do the job in a proper manner and a safe manner. They will put barrels together or boards together, or a ladder together, anything they can get together, to get up there, and we, working in the iron ore mines, being God-fearing men, take chances.

The foremen seem to tolerate it. The reason why I say some of these things is that I am in accord with having some type of legislation. I don't say on a State basis or Federal basis; I don't know which. I do say that some uniform laws or legislation should be put into effect, because then when you are discussing a safety problem, then the people who represent management know what they are talking about, and the people who represent, let's say, the employees, know what they are talking about, because there will be certain things that we would both have to adhere to.

In other words, it makes the thing more tangible. The matter isn't dropped so quickly. Then we will all know where we stand better than you do at present. The company, of course, has the prerogative to make the men do what they are supposed to do, and they have other means of impressing on their minds that they shouldn't have done what they did.

I promise on safety that the grievance committee won't fight too hard about those things. Really, that is all I can think of at present to say.

Mr. METCALF. Mr. Landrum?

Mr. LANDRUM. No questions.

Mr. METCALF. Mr. Blatnik?

Mr. BLATNIK. No questions.

Mr. METCALF. I take it, then, that you do believe that there should be certain minimum standards.

Mr. PAPPONE. I think so, so that when there is discussion taking place, that both parties know what they are talking about, because you have an ultimate goal that we have to measure up to, both us and the companies.

Mr. METCALF. I think that is a good point, Mr. Pappone. That is the end of your statement?

Mr. PAPPONE. Yes, sir.

Mr. METCALF. Thank you very much for coming forward.

Mr. PAPPONE. Thank you.

Mr. METCALF. And for your very helpful testimony.

Mr. SWANSON. Do we have anyone else among our committeemen who has something they want to say? We don't want any repetition or duplication, but if someone has something to say, all right.

We have a member of our union here, and he is also a member of the State legislature, Paul Widstrand.

Mr. METCALF. I am going to call on him if you are through.

Mr. SWANSON. I might add this: That there were a couple of things that I thought the committeemen would bring out, but perhaps didn't

think of, and that is that if there are certain minimum standards that are required in a safety code, so that the small operations would be required to meet these minimum standards, it would help.

Now, it is a well-known fact, I believe, that the larger the company, the more comprehensive and better safety program they have. The figures that have been presented by management this morning, by Picklands Mather, and Oliver, are very impressive, and, of course, we do recognize that they have a wonderful safety program, and we appreciate it.

On the other hand, we also recognize that other companies do not have such a good program, and, of course, a code that requires certain minimum standards would bring these companies' levels of standards up to where they are comparable with the larger operators.

Mr. METCALF. Mr. Swanson, do you feel that if we passed a Federal law requiring certain minimum safety standards, that that would tend to bring the standards of other companies that have higher standards down to that minimum?

Mr. SWANSON. I don't believe so, because I believe that even though we have certain minimum standards, that would not prevent any company from setting a higher standard than that established by any code.

Mr. METCALF. At the same time, it would bring operators up to a certain minimum who are not complying with any safety regulations?

Mr. SWANSON. That is the way we feel about it.

Mr. METCALF. Do you have anything more?

Mr. SWANSON. No, that is all I have, and, of course, I have the understanding that we will be able to submit a statement.

Mr. METCALF. I hope that you will supplement your statement, and the other statements that have been made, by additional information that you will supply to the committee sometime before the 20th of September.

Mr. SWANSON. I will do that.

Mr. METCALF. You have given me a list of men who were here, some of whom you called on, and others who are present, and unless there is an objection, I will have the list of those who didn't testify inserted in the record as here in attendance with you at the meeting.

Mr. SWANSON. Thank you.

(The information referred to is as follows:)

MEMBERS OF THE UNITED STEELWORKERS OF AMERICA, AFL–CIO, PRESENT:

Joseph McDonald, legislative representative, United Steelworkers of America, AFL–CIO, Washington, D. C.
Bloz Zakrajsk, safety committee, local 1664, Ely, Minn.
Cyril Wallis, president, local 2078, Eveleth, Minn.
John Graden, vice president, local 2078, Eveleth, Minn.
Louis Mitshuk, safety committee, local 3005, Virginia. Minn.

Mr. METCALF. Now, we have with us a member of the union that Mr. Swanson mentioned, and a member of the State legislature, Representative Paul B. Widstrand, from Hibbing, Minn.

It is good to have you with us, Paul.

STATEMENT OF PAUL WIDSTRAND, HIBBING, MINN., REPRESENTATIVE IN THE STATE LEGISLATURE FOR THE STATE OF MINNESOTA, AND MEMBER OF LOCAL 1663, UNITED STEELWORKERS OF AMERICA, AFL–CIO

Mr. WIDSTRAND. I am Representative Paul B. Widstrand, of Hibbing, acting in a dual role as an employee, also, of the Oliver Iron Mining Co. of the Hibbing-Chisholm district, Local 1663, Steelworkers.

Mr. Chairman, Congressman Landrum, and Congressman Blatnik, personally, it is a pleasure to be able to be here. I know that the people of my district appreciate most fully the committee coming here and having you make an inspection of the mines and calling in all the responsible people in the area to voice their opinions on the problems of safety.

Safety in the mines of this area, as far as I am concerned, has always been a bone of contention, and it always will be, because people are so constructed that they are never going to be completely satisfied with the next to perfect. They expect perfection, and, of course, they are entitled to it.

I believe that as an employee, and I suppose I should apologize to the companies. I may be slightly biased. I hope I am not, but I expect the committee will recognize that if it appears that way, you probably should judge it as such.

I am not a person that would be able to say I have a vast knowledge of it because I certainly do not. I am entirely a novice, and wherever I go or whatever I do, I am continually learning, and by that means, what I may say will be probably some other people's ideals, and I think that they are sound in their logic.

But I think the first committee in the Hibbing-Chisholm district was initiated on a voluntary basis between the then new union and local management entirely. That was not recognized by the district office, nor was it recognized by the company as a whole, but the superintendent within those close confines called in some of us members that were extremely active not only in union activities, but in such other activities that would show that our interest was there. I was the first chairman of the committee on safety of the headquarters area of the Oliver Co.

I have been a recognized committeeman on safety since its inception and recognition also by the contract.

That which has happened since then has been to me most gratifying. Not that we always see eye to eye, because were we to see eye to eye, the committees would not be necessary, but they have cooperated most fully, and under that circumstances, we have been able to go a long ways.

I would say to you, Bob, I apologize for having to say it, but sometimes figures are misconstrued. When you used the figure of "per 1,000 men" and they were working on the basis of 12 or more hours per day, and now we are working 8 hours, and maybe 4 days a week, I don't think that is an entirely true picture on the basis of accident reports.

But I will agree wholeheartedly that the accidents have been put down remarkably, but the biggest period of cutdown of accidents, from what I can gather, has been during the period of the close co-

operation between responsible parties both in the company and in the recognized agency of the employees.

Now, I recognize the problem of the company, and many times it is applied as a joke, but to us, as a joke, it illustrates fully what amounts to the fact that safety first is always recognized, first, if it does not disturb production, and secondly, if there is no cost element attributed to the company for its operation.

Now, it is always in a joking fashion when it is done, but nevertheless, basically there is some consideration. The union recognizes it and so does the company. They cannot go to the absurd extreme of insisting on some safety practices that are absolutely out of reason for cost, or for what results it will bring.

We recognize it, but nevertheless, as you revert back to it, there were people in industry, and it is only normal for a human to say, "My record both in production and safety is No. 1."

Now, practices in the past have been founded upon those, and the most difficult job anybody has in the company was the poor safety man. I don't know of any safety man that hasn't had probably a series of ulcers or close to ulcers because he had a job that he was to do and the job was most difficult because at times it actually did disturb production.

We can recognize a person whose only job was to see that production was obtained, and whose job was to get it out for people that were not even familiar with safety—not only that they weren't even familiar with the operation in any way, because their home may not even have been within thousands of miles of the actual operation.

But nevertheless, he had a directive to fulfill, and his obligations were to those people that wanted production at a reasonable cost, and making it profitable.

Now, I don't know what else I could add to this, but I would say this: That the State laws concerning this mine problem in the past were not what we wanted. It was not popular when we presented the first change in the basic law for mine safety, and that was both on the part of labor and on the part of management, and with the complete cooperation of management and recognized responsible people in labor, I think we came to what we call a very good, very operatable State mine-safety program.

It is on a county basis, and all its costs are attributed to the county, no part of it coming from any other recognized agency. There are counties now that will suffer if they do have mines, because they will have no inspection other than the industrial commission, and the industrial commission, under State law, is so overloaded now with the types of operations that they must conduct, that they do not do the job that should be done.

I think the biggest impetus to safety is public sentiment. If some kind of a Federal statute could be passed that would give certain regulatory rights to that body, whatever the body may be assigned for that problem, I think the reports coming from that body would make the public alert to what is happening.

Over the Nation as a whole, I for one certainly would not know what was happening in Butte, Mont., or down in Birmingham, Ala., but I do know what is happening here. It may be better and it may be worse in some cases, but we do have a record that we think we

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are doing good, but if we think we can improve it by having a nationwide scope on other people's practices of good safety measures, we certainly feel that we should have that right and opportunity to have it voiced to the entire Nation, so we can get the advantages that they afford their employees or their stockholders.

Because whether a stockholder has an expense account of accidents to pay, it is just as important to them as it is to the employee or his surviving kin or those responsible dependents, and that is a very, very touchy subject, because in my role as a legislator, I meet it day after day, and it is very gratifying to see that we have gone as far as we have.

The strength of our safety program, I am quite certain, today is based upon a contractual relation, and if that contractual relation were to break down, there may be a different picture, but I positively, in my mind, know full well that the results attained by that mutual benefie will never be dropped by the company, because they have got so much from it now that they themselves could not afford to go backward, nor would they go backward.

I know they, like the unions, insist that they are going to go forward, and I kinow legislatively we will try it, and I hope that it will be in the same category in the national picture.

Thank you, Mr. Chairman.

Mr. METCALF. Thank you, Mr. Widstrand, for a very fine statement. Do you have any questions, Mr. Landrum?

Mr. LANDRUM. No questions.

Mr. BLATNIK. No questions.

Mr. METCALF. We appreciate your appearance. You have made a genuine contribution to the committee, and I know that your statement will be read by the other members of the committee with just as much interest as it was heard today.

Thank you very much.

Now, that concludes the union testimony, insofar as I know. If Mr. Swanson has further witnesses who want to appear this afternoon, he will be recognized for the presentation of their testimony.

At this time, I want to insert in the record information on mining operations in the Lake Superior district prepared for the committee this month by the Bureau of Mines. Without objection it will be inserted at this point in the record.

(The information referred to follows:)

GENERAL INFORMATION ON MINING OPERATIONS IN THE LAKE SUPERIOR DISTRICT[1]

INTRODUCTION

The Lake Superior district is the greatest iron-ore mining area in the world. Annual production from the district is approximately 80 percent of the tonnage mined in the United States, and shipments have averaged about 80 million tons per year during the past 15 years (1941–55).[2] Employment figures for 1954 show approximately 7,500 underground workers and approximately 17,000 open-pit and other surface workers at iron and copper mines in the district.

The first commercial mining in the district began with copper mining in 1844 on the Keweenaw Peninsula of upper Michigan. This was followed by the opening of the first iron-ore mine in 1846 on the Marquette Range of upper Michigan.[3]

[1] Prepared by the Bureau of Mines for the Committee on Education and Labor, House of Representatives, U. S. Congress, August 1956.
[2] Bulletin of the University of Minnesota, Mining Directory issue, Minnesota, 1956.
[3] Bureau of Mines Information Circular 7744.

TYPES OF MINING

All of the operating copper mines of the district are underground mines. Approximately 20 percent of the Lake Superior iron ore is produced from underground mines and about 80 percent from open-pit mines. Nearly all of the iron ore from northern Michigan and all from northern Wisconsin is produced from underground mines, and most of the Minnesota iron ore is produced from open-pit mines.

In 1954 nearly 19 million tons of concentrated ore (including washed, jigged, high-density and other gravity concentrates, magnetic concentrates, sinter, sinter-dried ore, dried ore, and taconite magnetic concentrates) was produced in Minnesota.[4]

Two huge taconite mining and concentrating operations, involving a total expenditure of about $500 million, are nearing completion in northern Minnesota. Taconite, a hard iron-bearing formation, containing from 25 to 35 percent iron, will be mined by open-pit methods; it will be crushed and pulverized, and the iron particles will be separated magnetically. The iron-bearing particles will be fused into pellets about the size of walnuts, and the finished product will contain about 64 percent iron. The pellets will be shipped from the Lake Superior district by ore boat and delivered to the blast furnaces in accordance with the present practice for ordinary iron ore.

PROGRESS MADE IN SAFETY AT IRON-ORE MINES IN THE LAKE SUPERIOR DISTRICT

Fifty years ago 1 fatality occurred for about each 60,000 tons of iron ore produced in the underground mines of the Lake Superior district. During the last 5 years this rate has improved to 1 fatality for each 2 million tons of iron ore mined, and the annual production is approximately 15 million tons of iron ore from underground mines. The trend in accident-frequency and severity rates for the Lake Superior district iron-ore mines has been steadily downward during the past half century. Specially noteworthy improvement occurred during the period 1946–54; the accident-frequency rate for all iron-ore mines and plants in the Lake Superior district dropped 44.8 percent, the accident-severity rate 39.4 percent, and the fatality rate 40.9 percent.[5]

The records of the national safety competition, conducted annually by the Bureau of Mines, show that 42 sentinels of safety trophies were awarded to Lake Superior district mines from 1925–55, 21 to open-pit iron mines, and 21 to underground iron-ore mines. This is an outstanding accomplishment in safety of which the district has a right to be proud.

The Lake Superior Mines Safety Council deserves the most credit for the progress that has been made in safety during the past 37 years. Originally established as the Lake Superior section of the National Safety Council in 1919, it changed its name in 1947 to the Lake Superior Mines Safety Council. The council is composed of operators of the iron-ore mines and plants, copper mines and plants, and a limestone quarry in northern Minnesota, Wisconsin, and Michigan; and representatives of the Federal Bureau of Mines. Members of the council exchange information on accidents and accident prevention and hold district monthly safety meetings throughout the year and an annual conference in May of each year with an attendance of 700–800.

The various mining companies that are members of the Lake Superior Mines Safety Council have well-organized safety departments. County mine inspectors are appointed in the counties of Minnesota and Michigan in which mining is conducted, and Wisconsin has a State mine inspector. All of these inspectors attend and are active in the monthly and annual meetings of the Lake Superior Mines Safety Council.

SAFETY PROBLEMS INVOLVED

Although the iron-ore mining industry of the Lake Superior district has made outstanding progress in the reduction of injuries, the industry has long recognized the need for safety education for its employees and supervisors in order to maintain the downward trend of accidents and injuries.

During the 4-year period 1951–54, time lost from injuries in the iron-ore-mining industry in the district occurred in the following phases of mining (in order of severity): (1) Haulage; (2) falls and slides of ore and ground; (3)

[4] Work cited in footnote 2.
[5] Work cited in footnote 3.

falls of persons (includes raises, shafts, scaffolds, and slipping and stumbling); (4) mechanical loading equipment; (5) moving machinery; (6) falling material; (7) handling materials; (8) flying objects; (9) explosives; (10) electricity; and (11) miscellaneous. These represent the day-to-day type of accidents and injuries. In contrast to the coal-mining industry that has suffered from gas and dust explosions, the iron-mining industry of the Lake Superior district has been relatively free of major disasters.

ADDITIONAL SAFETY WORK TO BE DONE

For years the Bureau of Mines' activities with respect to health and safety conditions in metallic and nonmetallic mines and quarries has included accident-prevention courses for workmen and officials; assistance at mine fires and disasters; investigations of mine fires, disasters, and unusual accidents; safety inspections of mines and plants at the request of companies; training in first aid; training in the use of respiratory-protective equipment; dust and ventilation surveys; and publication of material on various aspects of health and safety, including accident statistics and analysis.

There is evidence that these educational and safety-promotional activities have contributed to improved health and safety conditions in metallic and nonmetallic mines and quarries. The Bureau believes that an increased effort should be directed along these lines, especially in the accident-prevention courses, if added appropriations should become available for an increase in engineering personnel to conduct the fieldwork.

Mr. METCALF. At this time the committee will recess until 2 o'clock, on which reconvening of the committee we will resume the testimony by Mr. Montague.

The committee is in recess.

(Whereupon, at 12:10 p. m., the subcommittee recessed, to reconvene at 2 p. m. the same day.)

AFTERNOON SESSION

Mr. METCALF. The committee will be in order.

Just before lunch we had concluded hearing from the members of the union and the employee groups. I want the record to show that Mr. Joseph McDonald, legislative representative of the United Steelworkers of America, was present for the hearing, but he will testify before the committee when we resume hearings in Washington.

The next witness, I believe, is one of your witnesses, Mr. Montague; and will you call him?

Mr. MONTAGUE. I would like to call Mr. George A. Borgeson, who is safety director for M. A. Hanna Co. M. A. Hanna Co. is something like the Pickands Mather organization. They manage the operation of a large number of mines in Lake Superior district.

They are either the second or third largest operator, the Oliver and Pickands Mather and M. A. Hanna being the three largest operators in the district.

Mr. Borgeson.

Mr. METCALF. We welcome you before the committee; and I see that you have a prepared statement, so you may proceed.

STATEMENT OF GEORGE A. BORGESON, MANAGER, SAFETY AND CLAIMS, M. A. HANNA CO., HIBBING, MINN.

Mr. BORGESON. Chairman Metcalf and members of the Special Congressional Subcommittee on Mine Safety, it is a pleasure, on behalf of the mining industry, to present the following statement relative

to existing legislative and related organizations concerning the safety and health of their employees:

Under existing State legislation, safety standards, laws, and codes for the prevention of accidents and preservation of health in all places of employment have been adopted by the Industrial Commission of Minnesota. They were established pursuant to authority of Minesota Statutes 1949, section 175.17, after public hearings held in accordance with Minnesota Statutes 1949, sections 15.042–15.049.

Help and assistance was given by officers and representatives of labor organizations, safety representatives of employers, and insurance companies in the preparation of the safety codes. Valuable technical advice and assistance in writing the code on environmental sanitation was given by the director of the Division of Industrial Health, Minnesota Department of Health.

The codes have been approved as to form and legality by the attorney general of the State of Minnesota and are on file in the office of the secretary of state.

The safety standards were issued by the department of labor and industry, division of accident prevention. This division is charged with the responsibility of administering the laws of Minnesota relating to the safety of all employees in industry.

Changing conditions require that additions and changes to the laws and codes be made for the prevention of accidents and the preservation of health of all places of employment.

Pursuant to sections 15.041–15.044, Minnesota Statutes, public hearings are held concerning any proposed changes. The last such meeting was held December 15, 1955. Persons who have any suggestions to offer or are interested in amending the rules pertaining to the health and safety of employees in all places of employment are invited to attend these hearings and take part in the proceedings.

At these hearings, union representatives, safety representatives of employers, and insurance companies, give valuable assistance in the revision of the rules and codes.

In administering the law, State inspectors make periodic visits of employers' operations. Any conditions found requiring correction are reported in writing to the employer by the chief of the division of accident prevention. The employer, in turn, must report to the chief of the division when the orders issued have been complied with.

Minnesota Statutes 1949, section 180.01 through 180.12 amended and approved April 23, 1951, contains an act relating to inspectors of mines, their compensation and duties, and the manner of inspection of mines and provides penalties for violations. A copy of this act is being supplied.

The act, among other things, authorizes and directs the board of commissioners of any county in this State where there are at least five mines situated and in operation to appoint inspectors of mines, with the number of inspectors to be determined by the county board.

The inspectors of mines in the discharge of their duties are required to visit, in person, all the working mines of their respective county at least once every 90 days, and oftener if request is made by employees or by management.

Section 180.07 provides that when 20 or more persons working in any mine or place where mining is done, or the owner, operator, or

agent of any mine or the certified collective-bargaining agent for the employees of said mine, shall notify the inspector of mines, in writing, that his services are needed, he shall immediately make an inspection thereof and examine as to the necessary precautions and general safety of the mine and see that all the provisions of the law are observed and strictly carried out.

Compliance of any order issued by the county mine inspector or his assistant relative to the safety and health of an employee is mandatory.

By reason of any accident in any mine causing loss of life or serious personal injury, it shall be the duty of the official in charge of the mine, or any one of his assistants, to give immediate notice to the inspector of mines. The inspector, after receiving the particulars of such accident, shall, if he deems it necessary, go immediately to the scene of such accident and personally investigate the cause and take such steps as he may deem necessary for the safety of the employees of such mine.

The inspector shall be accompanied by 3 persons appointed by the official in charge of the mine and by 3 persons appointed by the bargaining unit for the employees of the mine to serve in such capacity.

To supplement these inspections, a county mines safety committee was established in St. Louis County in 1951. This committee is made up of seven county commissioners, county attorney, county mine inspector and assistant, union and management representatives.

The function of this committee is to resolve any problems relative to safety and health brought to their attention. Originally, monthly meetings were held. After a short period, all members of the committee agreed that monthly meetings were not necessary.

The committee is now meeting once a year. The last meeting was held in September 1955. Meetings are called by the chairman of the board of commissioners once a year, or special meetings may be called whenever requested by any committee member.

There has been no reason for the chairman to request such a meeting since September 1955, nor for a full year prior to that time. Neither union, county commissioners, or management have found it necessary to call a special meeting to resolve any mine safety problem.

In addition to the present legislation, the various labor agreements between union and management provide that the companies shall continue to make reasonable provisions for the safety and health of its employees at the mines. Protective devices, wearing apparel, and other equipment necessary to properly protect the employees from injury shall be provided by the company in accordance with the practice now prevailing at each mine, or as may be improved upon from time to time.

Provisions of the agreement provide that if an employee shall believe that there exists an unsafe condition, changed from the normal hazards inherent in the operation, so that the employee is in danger of injury, he shall notify his foreman of such danger and the facts relating thereto in order that steps may be taken to correct the existing hazard.

Statement of other provisions of the union agreement has been presented to this committee today.

Through the years, the educational and safety activities of the United States Bureau of Mines, with offices at Duluth, Minn., have furnished invaluable assistance in the promotion of our safety programs.

In their field training, the Bureau's well-qualified personnel conduct courses in mine rescue, first aid, and accident prevention. In order to keep abreast of the changing conditions, these courses are renewed periodically.

They always furnish assistance in combating any mine fire and in the investigation of same. In addition, they assist in other safety and health activities such as dust and ventilation surveys, inspections of mines and plants, and any specific mine-safety problems.

Their numerous publications serve as a general reference in accident prevention.

Many years ago, the industry, in order to promote their program for the safety and health of their employees, under the leadership of the safety departments, formed the Lake Superior Mines Safety Council. The purpose of this organization is to correlate their safety problems. The council has received national recognition through their accomplishments in the promotion of accident prevention in the mines. The Bureau of Mines has taken a very active part in assisting in the activities of the council.

The Lake Superior Mines Safety Council is closely associated with the National Safety Council, which is the hub of the national safety movement. It serves as a clearinghouse to gather and distribute information about causes of accidents and ways to prevent them.

It investigates and compares ways of making equipment and working conditions safer. It helps the mine and plant management, the foremen, and workers to locate hazards and guard against them, as well as to recognize and prevent occupational diseases. It outlines programs for stimulating and maintaining safety interest both on and off the job.

Their many occupational safety services, used as aids to the safety program, are in daily use.

In summarizing, there now exists State and county legislation which is supplemented by county safety committees, the various union and management agreements, United States Bureau of Mines, Lake Superior Mines Safety Council, and National Safety Council, all of which specifically deal with the health and safety of the employees in the mines.

There is no complacency on the part of industry, although they can point with pride to the progress that has been made in their safety program. There is a full realization that there must be a continual educational program to combat the human factors that are ever present.

The industry knows that it is good business to put the health and safety of its employees first. Although safe and healthful working conditions can be justified on a cold dollars-and-cents basis, they prefer to justify them on the basic principle that it is the right thing to do.

Mr. METCALF. Thank you, Mr. Borgeson, for a very fine statement. Will you remain at the stand?

Before going further, Mr. Montague, I am going to ask unanimous consent to insert into the record at this point the provision of Minnesota law that was supplied by Mr. Borgeson and to which he referred, and I am also going to ask unanimous consent that article XIV of section 1 of the agreement between the Crete Mining Co. and United Steelworkers of America at the Albany mine be made a part of the record as an example of some of the safety agreements that have

been negotiated, and that the entire agreement be made a part of the file, but that article XIV on safety and health be inserted and incorporated into the record.

(The Minnesota law provisions referred to follow:)

MINNESOTA LAW

INSPECTORS OF MINES—APPOINTMENT, COMPENSATION, POWERS, DUTIES

CHAPTER 687—H. F. NO. 1600

AN ACT Relating to inspectors of mines; their compensation and duties; and the manner of inspection of mines and providing penalties for violations; amending Minnesota Statutes 1949, section 180.01, 180.02, 180.03, 180.04, 180.05, 180.07, 180.08, and 180.12

Be it enacted by the Legislature of the State of Minnesota:

SECTION 1. Minnesota Statutes 1949, section 180.01 is amended to read:

"*180.01 Appointment*

"The board of commissioners of any county in this State, where there are at least five mines situated and in operation, is hereby authorized and directed, on or before the first day of July, 1905, to appoint an inspector of mines, who shall hold office for the term of three years or until his successor is appointed and qualified, and in addition thereto may appoint one assistant inspector for every 20 mines as the board may determine for the purpose of discharging the duties hereinafter prescribed; to fix the compensation and traveling expenses of such inspector or any assistant inspector and provide for the payment of the same, and to remove such inspector or any assistant inspector and appoint another in his place when in the judgment of the board the best interests of the owners and employees of such mines may so require."

SEC. 2. Minnesota Statutes 1949, section 180.02 is amended to read:

"*180.02 Qualifications, salary, oath, bond*

"Each inspector of mines and assistant shall be at least 25 years of age, a citizen of the State, and a resident of the county wherein he is appointed, of good moral character and temperate habits. Previous to his appointment he shall have had practical experience as a miner or otherwise engaged as an employee in mines of the State at least six years, or a mining engineer having had previous to his appointment at least two years' practical experience in iron mines and iron mining and having had at least one year's such experience in this State. He shall not while in office in any way be interested as a owner, operator, agent, stockholder, or engineer of any mine. He shall make his residence or have his office in the mining district of the county for which he is appointed. The salary of each inspector of mines and assistant shall be such sum as shall be fixed by the board of county commissioners, not exceeding $5,000 per annum, and he shall in addition be allowed actual traveling expenses not to exceed $1,200 in any one year. He shall file with the county auditor an itemized account of his expenses every three months, verified by his affidavit, showing that they have been incurred in the discharge of his official duties. He shall, before entering upon the discharge of the duties of his office, take an oath before some person authorized by law to administer oaths that he will support the Constitution of the United States and the Constitution of the State of Minnesota, and that he will faithfully, impartially, and to the best of his ability discharge the duties of his office, and file a certificate of his having done so in the office of the auditor of the county for which he is appointed. He shall give bond, payable to the board of county commissioners, in the penal sum of $5,000, with good and sufficient sureties to be approved by the board of the county for which he is appointed, conditioned that he will faithfully discharge the duties of his office and this bond shall be filed with the auditor of such county."

SEC. 3. Minnesota Statutes 1949, section 180.03 is amended to read:

"*180.03 Duties*

"The duties of the inspector of mines shall be to visit in person or by one of his assistants all the working mines of his county at least once every 90 days and oftener if requested so to do as hereinafter provided, and closely inspect the mines so visited and condemn all such places where he shall find that the employees are in danger from any cause, whether resulting from careless mining

or defective machinery or appliances of any nature; he shall compel the erection of a partition between all shafts where hoisting or ore is performed, and where there are ladderways, where men must ascend or descend going to and from their work. In case the inspector of mines shall find that a place is dangerous from any cause, as aforesaid, it shall be his duty immediately to order the men engaged in the work at that place to quit work, and notify the superintendent, agent, or person in charge to secure the place from the existing danger, which notification or order shall be in writing, clearly define the limits of the dangerous place, and specify the work to be done or change to be made to render the same secure, ordinary mine risks excepted. It shall be the duty of the inspector of mines to order the person, persons, or corporation working any mine, or the agent, superintendent, foreman, or other person having immediate charge of the working of any mine, to furnish all shafts, open pits, caves, and chutes of such mine where danger exists with some secure safeguard at the top of the shaft, open pit, cave, or chute, so as to guard against accidents by persons falling therein or by material falling down the same, also a covering overhead on all the carriages on which persons ascend or descend up and down the shaft, if in his judgment it shall be practicable and necessary for the purpose of safety. When any mine is idle or abandoned it shall be the duty of the inspector of mines to notify the person, persons, or corporation owning the land on which any such mine is situated, or the agent of such owner or owners, to erect and maintain around all the shafts, caves, and open pits of such mines a fence or railing suitable to prevent persons or domestic animals from accidentally falling into these shafts, caves or open pits. The notice shall be in writing and be served upon such owner, owners, or agents, personally, or by leaving a copy at the residence of any such owner or agent if they or any of them reside in the county where such mine is situated, and if such owner, owners or agents are not residents of the county, such notice may be given by publishing the same in one or more newspapers printed and circulated in the county, if there be one, and if not newspaper be published in the county, then in a newspaper published in some adjoining county, for a period of three consecutive weeks."

SEC. 4. Minnesota Statutes 1949, section 180.05 is amended to read:

"*180.05 Inspector, Powers; owner, duties*

"It shall be lawful for the inspector of mines or assistant inspector to enter, examine, and inspect any and all mines and machinery belonging thereto at all reasonable times by day or by night, but so as not to obstruct or hinder the necessary workings of such mines, and it shall be the duty of the owner, operator, or agent of every such mine, upon the request of the inspector of mines, or assistant inspector to furnish for his inspection, all maps, drawings, and plans of the mine, together with the plans of all contemplated changes in the manner of working the mine or any part thereof; to furnish him with some suitable person, as he may desire, who shall be chosen from a list containing at least three candidates, submitted by a majority of employees of the mine, to accompany him through the mine, or any part thereof, and to furnish him suitable ladders and other necessary appliances to make a proper inspection and to furnish upon request the inspector of mines with all necessary facilities for such entry, examination, and inspection, and if the owner, operator, or agent refuse to permit such inspection or to furnish the necessary facilities for such entry, examination, and inspection, and continue so to refuse or permit, after written request thereof made by the inspector of mines, such refusal or neglect shall be deemed a gross misdemeanor, and, upon conviction thereof, such owner, operator, or agent shall be punished by a fine of not less than $500 nor more than $1,000 for each offense."

SEC. 5. Minnesota Statutes 1949, section 180.07, is amended to read:

"*180.07 Inspection requested, examination.*

"When 20 or more persons working in any mine or place where mining is done, or the owner, operator, or agent of any mine, or the certified collective bargaining agent for the employees of said mine, shall notify the inspector of mines in writing that his services are needed he shall immediately make an inspection thereof and examine as to the necessary precautions and general safety of the mines and see that all the provisions of this chapter are observed and strictly carried out."

SEC. 6. Minnesota Statutes 1949, section 180.08, is amended to read:

"*180.08. Accidents; notice, investigation.*

"When by reason of any accident in any mine loss of life or serious personal injury shall occur it shall be the duty of the manager or superintendent of the

mine, and in his absence the person or officer under him in charge of the mine, to give notice thereof forthwith to the inspector of mines, stating the particulars of such accident, and the inspector shall, if he deems it necessary from the facts reported, go immediately to the scene of such accident and make such suggestions and render such assistance as he may deem necessary in the premises and personally investigate the cause of such accident and take such steps as he may deem necessary for the safety of the employees of such mine and to prevent accident of a like or similar nature. The inspector shall be accompanied by three persons appointed by the manager or other person in charge of the mine and by three persons appointed by a majority of the employees of the mine to serve in such cases."

SEC. 7. Minnesota Statutes 1949, section 180.12, is amended to read:

"*180.12 Violations*

"Subdivision 1. Any owner, operator, or agent of any mine in this state violating the provisions of this chapter shall, except as otherwise specifically provided, be deemed guilty of a gross misdemeanor, and for each offense, upon conviction, fined not less than $100 nor more than $500.

"Subdivision 2. Any person who is in immediate charge of the working of any mine who fails to carry out any order of the inspector, issued pursuant to section 180.03, or who permits, directs, or authorizes any person to work in a manner which violates the provisions of section 180.04, shall upon finding by the district court of the county where the mine is situated that the order of the inspector was not unjust or unreasonable or an abuse of his discretion be guilty of a gross misdemeanor and, upon conviction thereof, shall be punished as provided in Minnesota Statutes 1949, Chapter 610.20. Each time an order of the inspector issued under section 380.04 is not complied with shall constitute a separate offense. Each offense shall be prosecuted by the county attorney of the county in which the offense took place."

Approved April 23, 1951.

SECTIONS OF STATUTES NOT CHANGED BY 1951 AMENDMENT

180.06 Salary and Expenses. The salary and expenses of the inspector of mines shall be paid out of the treasury of the county for which he is appointed by vouchers similar to those used by other county officials. The board of county commissioners shall furnish the inspector of mines with necessary books, stationery, and supplies. [1905, ch. 166, sec. 6] (4238)

180.09 Duty of Owner, Timber for Supports and Props.—The owner, operator, or agent of any mine shall at all times keep a sufficient and suitable supply of timber and logging on hand when required to be used as supports, props, or otherwise in the mining work so that the workings of such mine may be rendered reasonably safe and secure. [1905, ch. 166 sec. 9] (4241)

180.10 Removal of Fence; Guard.—Any workman, employee, or other person who shall open, remove, or disturb any fence, guard, or rail and not close or replace or have the same closed or replaced again around or in front of any shaft, test pit, chute, excavation, cave, or land liable to cave, injure, or destroy, whereby accident, injury, or damage results, either to the mine or those at work therein, or to any other person, shall be guilty of a misdemeanor; and, upon conviction thereof, punished by a fine of not exceeding $50.00 or imprisonment for not more than 60 days in the county jail for each and every such offense. [1905, ch. 166, sec. 10] (4242)

180.11 Annual Report.—It shall be the duty of the inspector of mines to make and file no later than March first each year with the auditor of the county for which he is appointed, and with the industrial commission, a full and complete report of all his acts, proceedings, and doing hereunder for each year ending December 31, stating therein among other things the number of visits and inspections made, the number of mines in operation, the number not in operation, the names of the mines, where located, the owners, lessees, or managers, the names of the officers, the quantity of ore shipped, the number of men employed, the average wages for different kinds of work, the number of accidents, fatal or otherwise, the cause of such accidents, and such other information in relation to the subject of mines and mining inspection as he may deem of proper interest and beneficial to the mining interests of the state. [1905, ch. 166, sec. 11; 1923, ch. 41, sec. 1; 1923, ch. 62, sec. 1; 1947; ch. 99, sec. 1] (4243)

180.13 Neglect of Inspector. Any inspector of mines appointed hereunder failing to comply with the requirements of this chapter, shall be guilty of a gross

misdemeanor; and, upon conviction thereof, fined not less than $100 not more than $1,000 and be dismissed from office, and the board of commissioners shall remove him from office for neglect of duty, drunkenness, incompetency, malfeasance in office, or other good cause. [1905, ch. 166, sec. 13] (4245)

(The article XIV referred to is as follows:)

ARTICLE XIV. Safety and Health

SECTION 1. The Company shall continue to make reasonable provisions for the safety and the health of its employees at the mine. Protective devices and wearing apparel and other equipment necessary to properly protect the employees from injury shall be provided by the Company in accordance with the practice now prevailing at each mine, or as may be improved upon from time to time. Within 30 days from the execution of this contract, the Company shall furnish the local Union at such mine with a list of the protective devices, wearing apparel, and other equipment furnished by the Company hereunder, and a statement of the conditions under which furnished. Goggles, gas masks shields, special-purpose gloves, fireproof or acid-proof protective clothing, hard hats and liners, electric cap lamps and belts, dust respirators, safety belts, welders' helmets and masks shall be provided to employees without cost, except that the Company may charge an employee a reasonable amount for any loss or willful destruction of any of the foregoing by such employee.

SEC. 2. The Union may designate employees with at least one year's experience at the mine, not less than three or more than five in number, to form, with a similar number of representatives designated by the management, the safety committee at the mine. The members named by the Union may be designated as representatives of particular departments of the mine. A member designated as representing a particular department may accompany the safety inspector of the company on an inspection of the department at least once each month, and may accompany any County or State mine inspector on any such inspections conducted by him if required by law or agreeable to such inspector. Following such inspection trip, there shall be a meeting of the safety committee at which recommendations with respect to safety conditions may be made, and at which time the action taken upon recommendations previously made shall be discussed. At the request of the safety committee, one member thereof may accompany management on its investigation of any serious or potentially serious accident.

SEC. 3. If an employee shall believe that there exists an unsafe condition, changed from the normal hazards inherent in the operation, so that the employee is in danger of injury, he shall notify his foreman of such danger and of the facts relating thereto. Thereafter, unless there shall be a dispute as to the existence of such unsafe condition, he shall have the right, subject to reasonable steps for protecting other employees and the equipment from injury, to be relieved from duty on the job in respect of which he has complained and to return to such job when such unsafe condition shall be remedied. The management may in its discretion, assign such employee to other available work at the mine. If the existence of such alleged unsafe condition shall be disputed, the Chairman of the Grievance Committee of the Union at the mine or his designee and the management's representative or his designee shall immediately investigate such alleged unsafe condition and determine whether it exists. If they shall not agree and if the Chairman of the Grievance Committee or his designee is of the opinion that such alleged unsafe condition exists, the employee shall have the right to present a grievance in writing to the management's representative or his designee, and thereafter to be relieved from duty on the job as stated above. Such grievance shall be presented without delay directly to an impartial umpire under the provisions of Article XI of this Agreement, who shall determine whether such employee was justified in leaving the job because of the existence of such an unsafe condition.

Mr. MONTAGUE. May I supplement your statement by saying that this happens to be the labor agreement of the Crete Mining Co., one of the Pickands Mather operations, covering the Albany Mine which the committee inspected. It was taken for that reason.

Similar but not exactly identical agreements or provisions are in the labor agreements of practically every mining company operating in this region. The language is not identical, but this is a typical provision.

Mr. METCALF. Yes, this is an example of the kind of a negotiated agreement that is incorporated into every agreement.

Mr. MONTAGUE. I don't believe there is a labor agreement in Lake Superior district that does not have quite similar provisions in it to the provisions here.

Mr. METCALF. Thank you very much.

Does that conclude your statement?

Mr. MONTAGUE. That concludes our formal presentation. I intended to ask the other two witnesses to come up and sit alongside Mr. Borgeson. However, preliminary to the specific questioning, I wonder if I could ask certain of these witnesses to make some explanation with regard to some statements that were made as to specific conditions this morning. I think it might expedite the questioning.

Mr. METCALF. We would be very glad to have you do so, Mr. Montague.

Mr. MONTAGUE. There were some statements made this morning as to the problem of bank control. That is control of the banks in the open pits, and some suggestion as to whether standards could be established or code could be established which might deal with that and other things.

I would like to ask Mr. Borgeson to briefly discuss this question of the bank, inspection of banks, and the setting of the slopes of banks in the open pit mines in this area.

Mr. BORGESON. I think you gentlemen will readily agree that in any excavating work that there is an inherent hazard from banks, and in mining, it is present there. It has always been recognized.

The type of material that they may be in determines the slopes of the banks. Through the years, from the kind of material, they know what would be safe slopes to use. However, with our changing weather conditions that we have here, there must be a constant check on those banks so that if there is any changing of the banks, they are checked and followed through with, such as our spring thaws that may loosen up rock and things, and for that reason, we must constantly check our banks.

The same would be true on benches, if benches are left they may slough off. So there is a never-ending checking of the natural conditions which are bound with our changing weather to have hazards that have to be watched.

Is there anything further on that?

Mr. METCALF. No. It was suggested that perhaps the width should be regulated so that in case there happened to be a sloughing-off or cave-in or something, that the material wouldn't fall down upon the men below.

Do you think there is any need for that?

Mr. BORGESON. When there are workmen that are near any area, as I understand it, working below a bank——

Mr. METCALF. Yes.

Mr. BORGESON (continuing). The precautions are taken prior to their ever going into such an area.

Mr. LANDRUM. That is the main purpose of the bench; isn't it?

Mr. BORGESON. That is the main purpose of the slope and the constant checking of the banks.

As you have noticed, going into the mines, there are benches, and it could slough off from one bench onto another. It wouldn't necessarily mean that you were even working in that area, but it is during that period when you aren't working in there that these banks are checked before they move any equipment into these areas.

Mr. MONTAGUE. I wonder if I could ask Mr. Borgeson a question. You speak about the banks being checked. What is done besides the examination of the bank to see whether it seems to be safe? What is done in the way of work on the bank?

Mr. BORGESON. Well, there is always the check of whether there are any cracks in the bank, and whether it would be possible for any great amount of material to come down through that not being attended to by seeing that it is broken off and brought down before anyone would be working in that area.

Further than that, especially in the spring and following any rainstorm, in surface material you always find boulders which will become loosened by the elements of the weather, and they have to be brought down. They can't be left there.

We have a weather condition here that creates that for us, and we realize that we have it.

A bank, on the other hand, which has a clear indication of a crack, that bank can't be left that way. It has to be brought down, and that, too, can be brought about by weather conditions.

Mr. METCALF. Do you maintain constant inspection of these banks so that when an unsafe condition develops that you can take precaution to prevent any loss of life or any injury to the workmen?

Mr. BORGESON. That is the main purpose of the inspection, to see whether there is anything apparent. I think we all realize that something can happen without anything being outwardly obvious to an inspection.

Mr. MONTAGUE. I don't know that you answered the question. Do you maintain constant inspection?

Mr. BORGESON. Oh, yes; I thought I said that. Yes, there is constant inspection made of the banks.

Mr. METCALF. You may proceed.

Mr. MONTAGUE. One other point that has been brought up as to the practice at the Zenith mine of Vermillion Mining Co., with respect to one man working in a contract. The Zenith mine is managed by Pickands Mather & Co. I would like Mr. Kolu to tell something of the record at the Zenith mine and what this method of mining complained of consists of, what the situation is.

Mr. KOLU. Mr. Chairman and gentlemen, the Zenith mine operated the entire year of 1954 and 1955 without a single lost-time accident. In other words, they accumulated more man-hours than any underground mine, and won the central State trophy for both years.

The first interruption we had was in April of 1956 when we had this one accident which resulted in a fatality, which was referred to this morning, and we feel that there was both a failure on the part of supervision and also the employee.

This accident I will try to relate as near as I remember it. I don't have the report with me. It happened in April, and actually there were 3 slices, 3 working places. They didn't have enough men to operate all 3 of them, so they had 3 men operate 2 places, and I forget which shift, but it was a night shift.

After lunch the foreman and the men discussed this particular place and a shiv block that was in the cave broke, and that was replaced and it was definitely understood by the supervisor and employees that no one was to go in the place.

The otther two men that were going ahead timbering, I think they were at the time when their place—both places were near each other, adjoining slices—and this one man proceeded to pull with a tug to pull the dirt out of the other place, when apparently the rope on the tug broke, and we never will understand why he went in there alone to repair this rope. In an exposed position, the material came down and he was buried.

We have had definite rules established when they work in these places. No man is to go in a place alone, and it has to be discussed with a supervisor before he goes in there. I mean before anything is done. They have some of the rules they have set up no one is to work alone when they are blasting, or preparing to blast, or lighting a fuse.

They are not permitted to poke in a cave alone. They are not to bar in there. The only work they are doing is back from the working place pulling with a tug, and apparently there was a human failure and also probably some failure on the part of supervision which resulted in this unfortunate incident.

Mr. MONTAGUE. How long had this method of mining—that is, as I understand it, you call it a 3-man contract, or 5-man contract method of mining—how long before this accident had that been in effect?

Mr. KOLU. This 3-man started in November 1 of 1954, and 5-man, April of 1955.

Mr. MONTAGUE. So that you had operated a full year, more than a full year, under this 3-man system without a single lost-time accident in the mine?

Mr. KOLU. And we also kept statistics on these various places. I mean, we had 3 and 5 men in a gang, and also where we had 2-man gangs. All the gangs in the mine weren't 3 and 5. We had 2 men where 2 men worked alone, and the experience wasn't any different. It was better in the 3- and 5-man place than it was in the 2-man place.

So management certainly was doing everything it could to prevent accidents.

Mr. MONTAGUE. Do you feel that this 3-man contract—as I understand it, that means that instead of having 2 men working in one place and 2 men in another adjoining place, that you have 3 men working the 2 places. Is that true as a simplification of it?

Mr. KOLU. That is right. Two adjoining places.

Mr. MONTAGUE. And the one man is only supposed to be working alone when he is pulling dirt with the tug?

Mr. KOLU. That is right.

Mr. MONTAGUE. And in the other part of the cycle there are 2 or 3 men working in the contract?

Mr. KOLU. That is right.

Mr. MONTAGUE. Do you feel that that is as safe as the other method of mining?

Mr. KOLU. I personally feel that it is; yes.

Mr. MONTAGUE. In connection with that, if I may, I will read into the record so that the whole record will be before the committee, the

grievance which has been filed in connection with this practice by the union at the Zenith mine.

The labor contract which you have, of course, has grievance procedures with an impartial arbitrator to decide it. This method of mining has provoked a grievance since the accident, this unfortunate accident.

The grievance was dated May 2, 1956.

We, the undersigned employees of Vermillion Mining Co., protest the unsafe method of mining in 3- and 5-man contracts. We request that this unsafe method of mining be terminated at once and that no men be required to work alone.

(Signed) TONY SICONIA
(For the union).

The disposition by the superintendent in the first step was that—

Three-man contracts have been working about 1½ years, and the 5-man contracts about 1 year. During this time an exceptional safety record has been accomplished. There is no question but that the operation can be carried on safely with the present 3- and 5-man contracts. The company feels that this method of mining can be carried on as safely as any other method of mining, and is always open to suggestion for increasing the safety of its employees. We are presently studying means for eliminating the situation responsible for the recent accident.

(Signed) B. S. RICHARDS,
Superintendent.

MAY 4, 1956.

That grievance is still being processed, and unless the company and the union agree on the question of whether that is a proper and safe method of mining, presumably it could be decided by an arbitrator, but it is being taken up through the normal grievance procedure provided by the contract.

Mr. METCALF. Final disposition of that grievance has not been made?

Mr. MONTAGUE. No; it has not been made. In part because we have had some 6 months' interruption of all proceedings because of the strike recently. That, I believe, covers the specific points that I wanted to bring to the attention of the committee before you went into your own questioning of the witnesses.

Mr. METCALF. Do you have any more questions that you wish to ask them?

Mr. MONTAGUE. I have no other specific ones that I had in mind. As I say, the witnesses are available for questioning by the committee.

Mr. METCALF. Thank you very much. Thank you for your assistance.

Mr. Landrum?

Mr. MONTAGUE. By the way, there is one thing more. There was a reference made to the method of mining at the Leonidas mine operated by the North Range Mining Co., one of the smaller companies. Mr. Michaels, safety director of that company, is here. I think that he would like to make a statement to the committee with respect to that situation as narrated by Mr. Arko this morning. If that can be done, I would like to give him an opportunity.

Mr. METCALF. Would you like to have him make that statement at this time, or following interrogation of these witnesses?

Mr. MONTAGUE. Possibly following the interrogation of these witnesses.

Mr. METCALF. At this time, I will state that unless there is objection, there will be permission to revise any of the remarks that are made in the hearing by either your witnesses, Mr. Montague, or your witnesses, Mr. Swanson, and that you, too, will have the same privilege that was given to the union, to file additional information on or before September 20, which would be incorporated in the record provided it is not too voluminous.

Mr. Landrum, do you have any questions?

Mr. LANDRUM. No questions.

Mr. METCALF. I am not quite clear as to the direction that this testimony that you have presented is going. Is it your contenttion here that because you have inspection from the State of Minnesota, and county mine inspectors, and from your insurance carriers and your own voluntary work in your St. Louis Safety Council and National Safety Council, that no Federal legislation or no Federal inspection is needed? I don't know to whom to address that question.

Mr. MONTAGUE. I would be glad to attempt to answer, and state the position of the industry, although I would like to have these witnesses supplement it in any way they would like.

Mr. METCALF. I hope any of you that feel that you can contribute will answer the questions.

Mr. MONTAGUE. We are speaking now only for the Lake Superior mining industry. We are not attempting to speak for the mining industry over the country as a whole.

As far as Lake Superior mining industry is concerned, we feel that we have a very, very rigidly followed, very efficient safety system set up in the combination of the State mine-inspection laws, the labor contracts with the unions, the safety department set up by the companies, and the cooperation between the companies and the Federal Bureau of Mines.

We think that so far as inspection, for instance, is concerned, just taking that one feature, we think that we have more efficient inspection than you would ever get from having a Federal inspector of mines coming along occasionally to inspect our mines.

We fear that the existence of a Federal inspector and his occasional inspections will to some extent take the responsibility, take away some of the efficiency of, for instance, the county mine inspectors. We feel that now they know they have the responsibility with respect to inspection of the mines. They know that is their responsibility.

If there was a Federal inspector making occasional inspection, we fear that it might weaken the standing, might weaken the efficiency of our present methods. That is so much for the inspection department.

As to a code, I was talking with one of the men here today on that question of a suggestion that there might be a code of minimum standards. Mr. Borgeson told me that with all his experience in mining, he wouldn't know how to draw up a code of standards for mining in Minnesota that would be applicable to all different mines.

He wouldn't know how to draw such a code for just Minnesota, let alone trying to draw one which you would attempt to apply to copper mines in Montana where the situations are entirely different, underground mines of Michigan and the Vermiilion Range, to the deep underground mines, and open pits of Minnesota and mining elsewhere.

Attempting to write a code of minimum standards, unless you are going to have it as big as all the rest of the statutes in the United States, is not going to be a feasible way of approaching the problem.

We are saying this, that industry has taken this position, not from any reluctance to get help from the Federal Government in the problem, not with any idea to block efforts of the Federal Government to improve safety standards, but as applied to this particular area, we feel that neither of those approaches would be a significant addition to the safety standards in this region, whatever they may be elsewhere in the United States.

I have tried to state as I understand from talking to the representatives of different companies the position of the industry. I would be glad to have any of these men supplement that if they have anything they would like to add.

Mr. METCALF. I wish you would, if you have anything to supplement.

Mr. BORGESON. The one thing I would like to supplement to that is that we feel we have felt for some time that education is the all-important thing. We have the human element which is always present, and until we sell everyone that they all have a responsibility, we still will continue to have a safety problem.

I don't think you can do it by inspections or any other way other than trying to get across the educational program such as we have in progress now, and such as the National Safety Council has.

They are trying to reach the goal by education, and if we continue with our educational program, I think we will continue to have progress, because we do have our inspections and every employee has a right to bring in anything that he thinks is a hazard, and with the cooperation, as was pointed out this morning, that we are getting between union and management, we think we are getting near that where we are reaching out and getting everyone in the picture.

If we don't get them all in the picture, we will never lick the safety problem. So I feel that it is an educational program.

Mr. METCALF. Do any of the rest of you have any comment so far before I go on to another question?

Now, do you feel that there is any place for the Federal Government in this mine-safety program?

Mr. KOLU. If I may answer that, as George Borgeson said, in the matter of education, they could do more along the lines of education. They have their safety-training program, their mine-rescue and first-aid training program, and I think they could probably do a little more as far as educating the mines of the various mining companies. I think if they had probably one additional man in the Department, that might do it.

Mr. METCALF. One additional man for this area to give you information and so forth?

Mr. KOLU. That is right.

Mr. METCALF. Yes, Bob?

Mr. WILSON. I would like to add, too, I think there is a place for the Bureau in this educational portion of the program in supplying us with, oh, let's say, safety posters, particularly as pertain to mining. There is, we feel, a woeful lack of that type of material.

We ourselves, in the council, have prepared posters that apply just to mining, and have used those in our mines throughout the area.

We feel, too, that there is a need for more audiovisual aids. There is a woeful lack in that respect, and we find that those particular aids, movies, and slide films, are of particular interest to the employees. They seem to like them very much and they are able to grasp the safety point that is put across, or points.

We think that in that area the Bureau of Mines can be of help. We certainly would want to work with them in preparing such films and the like of that. We think in that area there is room for improvement, definitely.

Mr. METCALF. Do you have any comments on that, Mr. Borgeson?

Mr. BORGESON. Nothing further, but I am certainly wholeheartedly in accord with that.

The visual-aid program, I think, has advanced the safety tremendously, and that was discovered during the war that visual aid had many advantages over any other mode of putting across a practice.

Mr. METCALF. Then I take it that your position is one that merits a great deal of consideration on our part, because of the work that you have done and the achievements that you have made in this area.

Your position is that there is no need, nor would there be any value, in a general law setting minimum standards or in a general inspection law, but that there might be some benefit if the Federal Government would be the agent for gathering and disseminating information and research and safety education.

Is that a correct understanding of your position?

Mr. BORGESON. I think that states it very well.

Mr. METCALF. Have the witnesses examined the legislation that is before us, Mr. Montague?

Mr. MONTAGUE. I doubt whether any of them have. Have you?

Mr. WILSON. I have.

Mr. METCALF. Some of the principles are in section 1 of the bill, which provide that, for example it is—

> For the purpose of obtaining information relating to health and safety conditions in such mines, and quarries, the causes of accidents involving bodily injury or loss of life therein, as a basis for the preparation and dissemination of reports, studies (statistics), and other educational materials pertaining to the protection or advancement of health or safety in metallic and nonmetallic mines and quarries and to the prevention or relief of accidents or occupational diseases therein.

That section which was the preface to it is that the Secretary of the Interior is authorized to make inspections and publish reports for that purpose, would meet with your approval as a basis for preparation and dissemination of reports and studies and statistics and other educational material?

Mr. WILSON. As I interpret that, that is the furnishing of accident reports, perhaps in summary form, to the collecting agency for those facts, and at the present time that is what we are doing.

Last year we were asked to comment on the present form of reporting accidents to the United States Bureau of Mines accident statistics, and we felt that the accident statistics, the number of them, were quite inadequate. They didn't tell the story well enough.

This year we are to report in more detail, and that now is in the process of being done.

Mr. METCALF. Would it be beneficial if we had someplace in the industry where we would have uniform definitions and readily understood definitions of terms and uniform reporting procedures, so that

a description of an accident would be the same in this area as in Montgomery, Ala., or Tucson, Ariz.?

Mr. WILSON. For your information, that is already taken care of with the American Standards Association.

Mr. METCALF. I haven't gone into this question of occupational diseases in which I am greatly interested and concerned, because of the prevalence of silicosis in my own particular area, but the reason for my question was that silicosis means one thing in the Coeur d'Alene, Idaho, and it means something else in the Butte, Mont., area, and it means quite something else down in Utah or Arizona.

There are statutory definitions in some of those States that do not correspond to the ordinary definitions that we have in the State of Montana. I am using that for an example to show you that it seems to me that someplace along the line there should be some uniformity in reporting that occupational disease. It hasn't been done even under the Bureau of Standards.

Mr. WILSON. I was unaware of that fact, but I do know in the reporting of industrial injuries, there is a definite code, and it is spelled out very thoroughly.

Mr. METCALF. I am glad to hear that. Am I right in saying that silicosis and other occupational diseases of that nature are not a problem in this area?

Mr. WILSON. That is correct.

Mr. MONTAGUE. I don't think there should be any misunderstanding on that, however, Mr. Chairman. There was a problem years ago with silicosis in particularly the underground mines of Michigan. Before the nature of the disease was understood there was a silicosis problem.

The companies have gone to extreme lengths to get on top of that problem. They are satisfied they are not making any silicotics now, but before silicosis was recognized, there was a problem in the Michigan mines.

I wouldn't want you to have the impression that there has been no problem in the Lake Superior district. They feel now that by ventilation, and what they are doing with respect to ventilation, constant medical inspection of the men, X-rays and so forth, that they have gotten on top of the silicosis problem. They are not making them now.

Mr. METCALF. Are prospective employees required to have X-rays and physical examinations?

Mr. MONTAGUE. Yes, indeed. The chest X-ray is gone into very carefully.

Mr. METCALF. Not only X-rays, but a whole medical history?

Mr. MONTAGUE. We have a man here who can answer more in detail on the question of what has been done with respect to silicosis, if you would like to have that answer.

Mr. METCALF. I will defer my questions, then.

Mr. MONTAGUE. Possibly we could have him file a paper, if you want.

Mr. METCALF. I would appreciate that. I would appreciate it if he would file a paper as to these efforts that you have suggested that have been made, such as ventilation, and wet drilling, or whatever means you have used to eliminate silicosis in this area. It would be a valuable part of the record and probably in the preparation of a paper, he could cover it more thoroughly than we could in this extemporaneous interrogatory.

Mr. MONTAGUE. We will file such a paper.

Mr. METCALF. Thank you very much.

I think that concludes my questioning. I will ask Mr. Derrickson to supply anyone with as many copies of the various bills here as we have available with us so that if you do have any ideas or any particular objections to certain sections, you will feel free to let us know and incorporate that into the record, too.

The bill that we have specifically mentioned, of course, is Congressman Blatnik's bill, but they are identical bills, and if you get 9269 instead of his, or 11997, or one of the others that have been introduced, the page numbers and section numbers are identical.

Do you have further questions, Mr. Landrum?

Mr. LANDRUM. No.

Mr. METCALF. Thank you for a very helpful and informative statement, and thank you for your cooperation, Mr. Montague, and all the witnesses that have helped us.

I have one more witness here from the list of witnesses that was given me, Mr. Ben Kangas. Is that correct?

Mr. MONTAGUE. Mr. Ben Kangas is the county inspector of mines of St. Louis County. Whether or not he wishes to appear, I do not know.

Mr. METCALF. Mr. Kangas, I know as county mine inspector you are probably as experienced as anyone here. Will you give your name and official title and give us any assistance or any testimony that you think might be helpful?

STATEMENT OF BEN KANGAS, CHISHOLM, MINN., MINE INSPECTOR, ST. LOUIS COUNTY, MINN.

Mr. KANGAS. Mr. Chairman and gentlemen, I am Ben Kangas, inspector of mines, St. Louis County, Minn.

If I have a written brief, the rug has sure been jerked out by this previous testimony, but there are a few things I would like to clear up—in particular, my job.

It was casually mentioned that we were appointed by the county board of commissioners. That part is true, except it was after we had taken an examination submitted by the civil-service board of the county, and they were helped in preparation of it by the United States Bureau of Mines.

Of the original 34 candidates, I qualified the highest and I was given the top job. The next candidates were interviewed orally. This was a written examination. The next candidates were interviewed orally, and the number was broken down to 11, and from there they interviewed the rest of those candidates, and an assistant was selected.

At that time he was a contract miner in a mine in Ely, and had 15 years of experience over there. He was a total stranger to me. I had seen him before, but didn't know him.

So the two of us were put together. Incidentally, no applications for the job were accepted from anyone who didn't have mining experience of any nature. In Itasca County they had several applications for the job, and none of those were accepted unless they had actual mining experience, and the man they selected was selected on the

basis of his qualifications as to experience in underground and open-pit mines.

In Michigan, I understand they have a different system. They throw the job open to the public and whoever gets the most votes gets it. I can't say that I 100 percent approve of that arrangement, because I wouldn't want to have to go out and campaign for the job. It isn't worth it. It is too much grief.

Incidentally, the mine inspectors' law was passed in 1903, and it was the original piece of safety legislation in the State of Minnesota. The mining companies didn't start their safety operations until approximately 1912.

The statistics that I have, that Mr. Wilson dug into quite thoroughly, are statistics as presented from those early days, and they listed the deaths per 1,000 of men, because frequency and severity rates at that time weren't known.

I can't change them because I don't have the man-hours necessary to break them down into severity bases and frequency. There is another matter that comes in here, the matter of the duties of an inspector.

Well, the thing isn't specifically stated as to code or anything, but it says no one place that it shall be the duty of the inspector of mines to see that the mining pits and dangerous working places are fenced and all shafts are sealed. So we have interpreted that very liberally.

I have gone on inspections with members of the Railroad Brotherhood, as to railroad yards being in hazardous conditions due to material falling off the cars and mud collecting and creating a hazardous condition for trainmen that have to go in there at night.

I have gone to the schools and lectured to the kids about the dangers of dynamite and dynamite caps. I have visited machine shops in schools where they are teaching machine shop and I have discussed with the instructors the hazards of loose clothing and no eye protection and things like that.

We have been members of Public Safety Councils with the thought in mind that this job does not only require protecting the man on the job, but requires protecting the public against injuries that may be caused by working, such as these pits that I have told you about that have been abandoned, dumps that have been put next to the roads where there are big boulders that could be washed down on the roads, and washed out through the dumps themselves.

We have conducted our inspections according to the law, and even more so. Where the operation is pretty much routine and everything is going along smoothly, we make approximately an inspection every 60 days. We are very careful to make sure we have a union representative along with us, along with a management representative.

In the event there is a condition we consider hazardous, we stay with it. It isn't just an inspection now and 2 or 3 months later. I have gone back into certain pits as many as 3 and 4 times a week until a situation was remedied.

It is mostly in the case of these sloughing banks. They develop slowly and we have got to keep an eye on them. To satisfy my own curiosity, I do it myself. I am not saying that the companies are not doing that, because I think they are. When there is a situation that covers it, they watch it.

I have had extreme, good cooperation with fellows from the union. There hasn't been any bickering or arguing, and I have gotten excel-

lent cooperation from management. In fact, they have leaned over backward on some of the recommendations I have suggested.

Relative to calls by anybody who considers himself being in a hazardous situation, we have responded to them with an hour's notice after we get the call. It takes about an hour from my home to any part on the range here, and we have responded to those situations immediately, not tomorrow or the next day, but now, and that has been on a 24-hour-a-day basis, 7 days a week.

Now, in the matter of investigations of fatalities, we have called investigations of those and tried to make them as informal as possible so that every man had a chance to speak his mind. We always made positively sure that we had equal representation from the union and from the mining companies. I would never want to hear it said that we had covered up or whitewashed a job.

Now, I think that is just about what I can say about the situation, so much as evolves around this particular job, and I wanted to explain what the situation is here.

Mr. METCALF. Do you have any questions?

Mr. LANDRUM. No.

Mr. METCALF. As county mine inspector, do you think there is any need for a Federal mine inspector to supplement your activities?

Mr. KANGAS. Well, sir, I can answer that better this way: Years ago I was working in the engineering department in one of the underground mines, and the Industrial Commission sent up an inspector. The men that are familiar with this situation, they can understand it better, but when a tugger cable breaks, you tie a knot into it.

When the knot draws up right, you clip the loose ends off. So eventually you have a ball that tightens up like a man's fist. This gentleman suggested putting cable clamps on it. If they ever got that in a machine they would rip the machine, and wouldn't hold it in the first place.

He was concerned about the places where the weight was pressing down on the timbers, and every man that is familiar with a working place knows as long as that is happening, everything is normal. He thought the places where he saw the timbers standing up straight, even though there was sloughing from the sides, he thought that is the way the place was supposed to look, which boils down to this:

If the man is qualified, and knows what he is doing, I have no objection, and as far as Federal Government's place in there, I go along with these fellows from the mining companies here that we could use the educational facilities of the Bureau of Mines.

One more thing. These independent contractors who do not have organized safety departments, those are people that we particularly watch. If they have unguarded machinery, we require them to guard it, and if they have unsafe conditions, we cause them to rectify them.

We generally don't try to pressure anybody. When we have recommendations to make, we make them either to them verbally and if they don't comply we send them a written notice similar to a writ, and if they don't come along with us then, we turn it over to the county attorney's office and it is a misdemeanor and it can be prosecuted and they can be fined, and I think imprisoned.

I am not sure about that. I think they can get a little time in jail, but we have never had to resort to anything that drastic. They have come along with our request.

Mr. METCALF. Your concern is that you are afraid if we have a Federal mine inspector he won't be qualified; is that right?

Mr. KANGAS. I am afraid somebody will come in here and upset the applecart. We have established prestige and respect. I don't want to have somebody say, "What are you talking about? Here is a Federal man that says differently."

Mr. METCALF. In the unlikely event that we had a qualified Federal mine inspector, would he be of any benefit or help to you in doing your job?

Mr. KANGAS. He might in this respect: That he, like me, would try to help these fellows as we travel from job to job. He might see something on one job that would be available and to the benefit of another job.

Mr. METCALF. Because of his experience in other mining areas, he might give you some advice?

Mr. KANGAS. That is right.

Mr. METCALF. I think that is all. Thank you very much, Mr. Kangas, for your testimony.

Now, I believe that we have one more witness who was going to testify in response to some of the matters that were made—Mr. Michaels.

Mr. MONTAGUE. Mr. Michaels of the North Range Mining Co., which was the company operating the Leonidas Mine referred to this morning.

Mr. METCALF. Mr. Michaels, will you give your full name and your title and your address to the reporter and then proceed in your own way?

STATEMENT OF F. G. MICHAELS, DIRECTOR OF SAFETY, NORTH RANGE MINING CO., NEGAUNEE, MICH.

Mr. MICHAELS. F. G. Michaels, North Range Mining Co., director of safety, at Negaunee, Mich.

Mr. Chairman and members of the committee, I was quite concerned this morning over some of the remarks that were made with respect to our operation at our Leonidas mine, and, naturally, I contacted Mr. Arko immediately after the closing of the session.

There were some things Mr. Arko was not aware of, namely, that the vice president of operations and myself and the mining captain climbed up into No. 1 block during the strike when the mining was idle, and caved out on an open sub and looked into that block and found it was three-quarters full, so he was not working next to an open block.

Now, he made references also to the fact that we are using timber to support our transfer subs. As you know, we had a steel strike, and we have been trying our very best to get a carload of usable large steel into the mine to hold up our subs. I was informed that that carload of steel was shipped on the 14th of August. It will be here very soon.

In the meantime, we are striving to and doing everything we can with timber to hold the subs. In realization of our predicament there, we have changed our methods of mining. We are not pulling the

block as the block cave should be pulled. We are only drilling on the far end and retreating.

Otherwise, if we drilled the entire block and pulled it as an entire block, without the steel sets, we would flatten our subs and we appreciate that. We understand and know that it is dangerous. So those facts were explained to Mr. Arko and he was quite surprised and said that he hasn't known that and he feels a lot better about it now.

One other point that he brought out was the fact that he was bellying out a raise, and they were scraping below him. That is a situation that can be remedied in very short order. So I did want to get here this afternoon to explain those facts to you. Mr. Arko was satisfied.

You probably wonder why these men were not informed of the situation previously. Since the mines opened on August 4, this is my first trip to Minnesota. I had scheduled an inspection tomorrow morning with the union, and with our mining captain, and at that time we would discuss those problems.

Unfortunately, they came out ahead of time here, and it didn't sound too good, as far as I was concerned, and I certainly appreciate the opportunity of explaining to you gentlemen just what the conditions are. Thank you.

Mr. METCALF. Now we know what to look for tomorrow. Thank you very much.

Are there any more witnesses? Do you have any more, Mr. Montague?

Mr. MONTAGUE. No; we have no further witnesses.

Mr. METCALF. Mr. Swanson, do you have anyone else you wish to put on?

Mr. SWANSON. No. We have no further witnesses.

Mr. METCALF. Unless there is anything more to come before the subcommittee, the committee will stand in recess until we meet again at 10 o'clock day after tomorrow in Duluth.

(Whereupon, at 3:05 p. m., the subcommittee recessed, to reconvene at 10 a. m., Friday, August 24, 1956, in Duluth, Minn.)

MINE SAFETY (METALLIC AND NONMETALLIC MINES)

FRIDAY, AUGUST 24, 1956

UNITED STATES HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON MINE SAFETY OF THE
COMMITTEE ON EDUCATION AND LABOR,
Duluth, Minn.

The subcommittee met at 10 a. m., pursuant to recess, in courtroom No. 3, the Federal Building, Duluth, Minn., Hon. Lee Metcalf (chairman of the subcommittee) presiding.

Committee members present: Representatives Metcalf and Elliott. Also present: Representative Blatnik.

Staff members present: Russell C. Derrickson, chief investigator. Committee on Education and Labor.

Mr. METCALF. The Subcommittee on Mine Safety of the Committee on Education and Labor will be in order.

I want to introduce the people who are assisting at this hearing.

Our reporter is Mr. Don Johnson of Washington, D. C., formerly of Minneapolis. The staff assistant is Mr. Russell Derrickson, who is a regular staff assistant for the Education and Labor Committee.

I regret that Mr. Landrum of Georgia, who has attended the previous hearings, is unable to be with us this morning, as he was called home to Georgia. But we have been joined by Hon. Carl Elliott, who is on my right, a Congressman from Alabama, and regular member of the Education and Labor Committee.

We are also pleased to have with us the Congressman from the Eighth District of Minnesota, who has done so much to arrange and take care of the various activities in these hearing. Congressman Blatnik, we are very happy to have you with us in this committee. We know of your interest in mine safety as well as that of the other members of the committee. I hope you will feel free to ask questions and assist with the hearing.

Mr. BLATNIK. Thank you.

Mr. METCALF. Without further ado, we will start with the list of witnesses we have this morning.

Mr. Jack Powell of Negaunee, Mich., has a group of witnesses he will introduce. And after that, I believe, Mr. Powell, you are going to make a statement.

You may proceed in your own manner. We are very glad to have you with us.

STATEMENT OF JACK POWELL, REPRESENTATIVE, UNITED STEELWORKERS OF AMERICA, AFL–CIO, NEGAUNEE, MICH.

Mr. POWELL. Thank you, Mr. Chairman and gentlemen.

The United Steelworkers of America feel particularly privileged to present testimony in behalf of H. R. 9294 and 9269, bills designed and intended to provide a measure of safety for the people who work in the metallic mines.

We cannot properly apologize to the committee for having failed to present prepared statements which we could present to you and shorten this meeting. But, in extenuation, we might say that the steel workers union has been, during the past few weeks, occupied in attempting—and successfully attempting—to settle a strike.

With those remarks, we hope that you will forgive us for our seeming lack of preparedness in this matter.

Mr. METCALF. Mr. Powell, if you will yield just a moment and permit an interruption.

Not only do we understand that you have been engaged in other very important business to the Steel Workers Union and to the people of America, but this whole hearing was set up on rather short notice, and an opportunity was not given for complete preparation.

We hope that the members of your organization, as well as the various employer organizations, will give us technical and specialized testimony in late November or early December when we hold further hearings in Washington.

But we want to hear from representative members of your union who are working in the field in this particular hearing, and we are very happy to hear you in any way that you wish to present your testimony.

Mr. POWELL. Thank you. You are very generous.

Mr. Chairman, the question of safety in the metallic mines is one that has been largely overlooked through the years insofar as legislation is concerned.

In the State of Michigan there has been no legislation covering safety for employees in that industry since 1911, at which time a system of mine inspection was set up under an act of the legislature, which provided that the inspections of iron and copper mines should be done by an inspector elected in the county who was solely responsible to the board of supervisors in that county.

He made very brief and, oftentimes, incomplete reports of his inspections. And his wage or salary for doing that work was set by the board of supervisors, and paid from county funds.

Prior to 1952 or 1953 any citizen in the county was eligible to serve as mine inspector. That meant that he might be a drug clerk or he might be a miner; he might be a farmer, and in many instances, did prove that he was an official of the mining company that had mines that he was inspecting.

That led, of course, in many cases to a situation where the mine inspector either did not know what he should do, or he was not inclined to make a strong representation for safety measures.

Beginning in 1945 the union has initiated and forwarded, insofar as possible, the adoption of better mine safety laws in the States in which we represent the employees of the mining companies in the Lake Superior region. That is Minnesota, Michigan, and, to a slight degree, Wisconsin.

A bill was introduced in the Michigan Legislature in 1945 by State Senator Alvin Hampton, of Negaunee, which is, in substance, the same bill that has been reintroduced in sessions consistently since that time.

Not one of the bills presented in behalf of the employees in this industry has ever left the committee to which it was assigned in the legislature. They have all died there, without exception.

The only improvement that has been made in the law of 1911 occurred in 1952 or 1953, at which time the legislature amended the old act to provide that a mine inspector must be either a graduate mining engineer or a practical miner with at least 10 years of experience working in underground mines.

At that time also the legislature provided that the mine inspector should be paid by the county board of supervisors a wage of $15 a day, and that not more than 5 days in any week could be spent in mine inspection. They left it up to the board of supervisors to determine how many fewer days might be consumed in the inspecting of mines. That was, of course, in order to limit the amount of money which the county would be required to pay for the inspections made.

We have been shocked—we have been very, very seriously shocked—by actions taken by some of the companies in immediately terminating the services and the seniority of any active member of the union who happened to believe in mine safety and got out and got himself elected as mine inspector.

So, more and more, we are being forced into a position where mine inspections are made, in many cases, by superannuated former employees of the company who are just simply not physically able to make a proper and complete inspection of the mines, and whose powers are so limited by the bill which is now in effect in Michigan that we just can't get mine inspection, good mine inspection.

We have presented many bills. And I would like to leave one with the clerk for inclusion in the record, that is entitled "House bill 209," introduced in 1955 and reintroduced in the 1956 legislature. It is exactly the same as the ones introduced each year since 1950. And, gentlemen, it follows in many details the recommendations made by Mr. Kelley and Mr. Blatnik in the Federal legislation that is being considered at this time.

(House bill No. 209 of the Michigan Legislature, 68th sess., 1955, is as follows:)

MICHIGAN—68TH LEGISLATURE

Regular Session of 1955

HOUSE BILL No. 209

March 3, introduced by Representatives Mezzano, Jacobetti, Wales, and Goulette; ordered printed and referred to the Committee on Labor

A bill to provide for the establishment of the division of copper and iron mine inspectors under the commissioner of labor; for the appointment of chief and deputy inspectors; to prescribe powers and duties; to provide for their compensation; to provide for periodic mine inspections; to prescribe the duties of owners and operators of mine operations; and to repeal certain acts and parts of acts

The people of the State of Michigan enact:

SECTION 1. There is hereby created the division of copper and iron mine inspectors as a part of the office of the commissioner of labor, and there shall be

appointed by the commissioner of labor a chief inspector of mines, who shall have charge of said division, and such number of deputy inspectors as shall be necessary to carry out and perform the functions of this division. The chief inspector and any deputy inspector appointed under this act shall have had at least 10 years' actual experience in either copper or iron mining. Such chief inspector and deputy inspectors and such other technical and clerical employees as shall be necessary to carry out the work of this division shall receive such salary and compensation as shall be fixed by the civil service commission, and, in addition to such salary and compensation, the said officials shall be allowed their necessary expenses incurred in the performance of their duties.

SEC. 2. It shall be the duty of the said chief inspector and deputy inspectors to inspect and supervise all copper- and iron-mining operations for the purpose of determining whether said mining operations are in a reasonably safe condition for employees to work therein and for the general public. "Mining operations," as used in this act, shall be deemed to include any operation in which copper or iron ores are being removed from the earth and shall be deemed to include all mines, excavations, and diggings in actual operation and all mines, excavations, and diggings in which operations have ceased or which have been abandoned. All mine inspections herein provided for shall be for the purpose of promoting the safety of all mine employees working in any mine operation and for the general public, and shall be for the purpose of eliminating any dangerous or hazardous condition in any mining operation, and said mine inspections shall apply to any phase of iron or copper mining which has bearing on the health or physical welfare of the employees and the general public.

SEC. 3. It shall be the duty of the chief inspector, or one of the deputy inspectors under his control, to inspect every mine operation in actual operation at least once a month, and it shall be the further duty of the said chief inspector or deputy inspectors, upon written complaint with respect to any dangerous or hazardous conditon relating to any mining operation, to inspect and examine same within 20 days of the receipt of said complaint. Upon the discovery of knowledge of any dangerous or hazardous condition, with respect to any mining operation, it shall be the duty of the chief inspector or one of the deputy inspectors to give written notice to the owner or operator or person, firm, or corporation responsible for the maintenance of said mining operation of said dangerous or hazardous condition, and it shall require the elimination of such hazards as shall be necessary. If in any mining operation there is found a dangerous or hazardous condition which is imminently dangerous to the lives of the employees therein or the general public, said chief inspector or deputy inspector shall require all work to cease in the particular mining operations, except such as is essential to the safety of other mining operations. Such temporary stoppage shall be for a period of not longer than 30 days, and it shall be the duty of the chief inspector to serve upon the owner or operator of such mining operation forthwith a notice to show cause why the said temporary order should not be made permanent. Said notice shall provide for a hearing on the question of whether or not the temporary stoppage shall be made permanent. Said hearing shall be held before the commissioner of labor, who may enter an order after a full hearing and upon proper showing permanently restraining the owner or operator of any mining operation in which there exists a condition imminently dangerous and hazardous to human life from operating same until said condition has been eliminated.

SEC. 4. For the purpose of facilitating the work of this division and for the purpose of providing safety standards for all iron and copper mines, there shall be appointed a safety code commission consisting of the chief inspector and 2 other members to be appointed by the commissioner of labor. Of the 2 latter members, 1 shall be a representative of a mine labor organization and the other of the mining industry. The commissioner of labor may adopt such code or any part thereof as a regulation of his department and may make such further rules and regulations as may be necessary to the adequate enforcement thereof, subject to the provisions of Act No. 88 of the Public Acts of 1943, as amended, being sections 24.71 to 24.82, inclusive, of the Compiled Laws of 1948. A violation or breach of any of the provisions or requirements of said code shall constitute prima facie evidence of the existence or maintenance of an unsafe mine operation within the meaning of this act, and any owner or operator of any mine operation who violates said code shall be subject to the provisions of section 5 relative to the paying of double compensation if the violation or breach of said code shall in fact constitute the maintenance of an unsafe and dangerous condition.

SEC. 5. Any person who violates the provisions of this act or the rules and regulations established by the commissioner of labor shall be guilty of a misdemeanor and shall be punished as provided by law. If any employee is injured or loses his or her life as a result of any dangerous or hazardous condition in any mine operation after the owner or operator has received notice by one of the inspectors as herein provided for to eliminate and correct said condition and has neglected to do so, the said injured employee, or his or her dependents, if he or she loses his or her life, shall be entitled to double the amount of compensation as provided for by the Workmen's Compensation Act.

SEC. 6. In the enforcement of this act and rules and regulations issued pursuant thereto, said chief inspector or any deputy inspector shall have the right to resort to any available civil remedy either in a court of law or equity.

SEC. 7. The procedure for recovering any double compensation in accordance with this act shall be in accordance with the Workmen's Compensation Act, as amended.

SEC. 8. Any person who shall feel himself aggrieved by any decision of the commissioner of labor issued under the provisions of this act shall have the right to appeal such decision to the circuit court of the area in which said mining operation is conducted. Such appeal shall be taken within 20 days after the making of such decision.

SEC. 9. Act No. 163 of the Public Acts of 1911, as amended, being sections 425.101 to 425.113, inclusive, of the Compiled Laws of 1948, is hereby repealed.

Mr. POWELL. We believe that the only effective way in which mine safety can be enforced is through the adoption of a code of safety practices which then can be enforced by an inspector who is removed from petty local county politics. In other words, we believe that it should be a State proposition in the case of the legislation we have proposed in Michigan and Minnesota, or it should be done by a federally appointed inspector with a code worked up by people from the Bureau of Mines, from the industry, and from the labor union representing the employees.

We will show this morning by testimony of the witnesses who are with us some of the results of the haphazard inspection that we have had in the past few years. We will show the results as they are measured in terms of fatal accidents and the results as they are measured in terms of man-hours lost through the principal accidents during the year.

We hope that we may avail ourselves of the invitation extended by the chairman to present this in a more formal and detailed manner between now and December 1.

If I may be privileged to answer any questions that you have in your minds now or at the conclusion of the testimony of the witnesses, I will be glad to do it in that manner.

Mr. METCALF. Mr. Powell, would you prefer to have us question your witnesses separately or would you prefer to put all of your testimony on of all the witnesses and then have the committee ask any questions of any of the witnesses they see fit?

Mr. POWELL. I should like, Mr. Chairman, if it is permissible, to present two of the witnesses who have prepared testimony and then allow the committee, if it wishes, to question all of them as to their own knowledge.

Mr. METCALF. You will keep them all up here and available?

Mr. POWELL. That is correct.

Mr. METCALF. That is the way we will proceed.

In order to take care of the record then, House bill No. 209, that you have presented, will be inserted in the record.

Mr. POWELL. Thank you.

Mr. METCALF. Unless there is objection.

You may call your next witness, Mr. Powell.

Mr. POWELL. I would like to call Mr. John Cole of the Calumet & Hecla Copper Co., Inc., to the stand.

Mr. METCALF. Mr. Cole, we are very glad to have you before the committee. You may sit alongside of Mr. Powell and make yourself comfortable.

Will you give your address and your occupation to the reporter for the record.

STATEMENT OF JOHN W. COLE, CALUMET, MICH., MINER, CALUMET & HECLA MINING CO., INC.

Mr. COLE. It gives me great pleasure at this time to appear before you to state a few facts.

We need a mine-inspection bill, and we need one badly. The Calumet & Hecla Mining Co., that I work for, gives a lot of lip service to safety, but no real action is ever taken.

I would like at this time to extend an invitation to you gentlemen to visit our area. However, I suppose your time is limited, too.

In the shaft I work at we are confronted with rock bursts or, as we call them, air blasts. They are bad. We have no warning whatsoever at any time as to when they are going to blow off.

Mr. ELLIOTT. Let me interrupt right there.

What causes these rock bursts or air blasts?

Mr. COLE. Pressure, too much weight on the portion that you happen to be mining at the time.

Right today we are mining in what we call the shaft pillars. They are ground that is left over the years as they went down with the shaft; and then they work up, you see, and they leave the shaft pillars to hold up the shaft. Now we are mining them out to within 5 to 50 feet of the shaft.

Mr. METCALF. You are retreating then; taking out the final amount?

Mr. COLE. That is right.

Of course, even when there was 400 or 500 feet of that shaft pillar left we still had rock bursts. Now they are cut down to about 5 to 50 feet, and, of course, the hazard increases.

I would also like to give you some idea of the mine inspector in our county.

He has no power whatsoever. Any action he takes he must take through the prosecuting attorney. I asked the mine inspector one time to stop a stope I work in, and he said he would have to go to a lot of redtape, and he did not thing it was worth while. He would have to close down the whole shaft before they could fix up this stope. They don't close down one spot, but they close down the whole shaft. And, of course, the mining company would not want anything like that. So they don't go through with it because in many cases the fellow is either an employee of the company or he is liable to lose his job the next election. And, if he is an old man, he would like to hang on to it.

We at one time had a foreman working for us that was also the mine inspector of the same company. And he wouldn't take any action either. Of course, you can hardly blame him. He is their foreman, and he is not going to jeopardize his job. But it just hap-

pened that he was a well-like fellow, and he got the job. He was elected.

Mr. ELLIOTT. Let me ask you this question: Under this procedure that you are outlining did you ever have a stope closed down for safety reasons?

Mr. COLE. No.

Mr. ELLIOTT. Has there been one closed in your knowledge or recollection?

Mr. COLE. Well, yes. About 6 years ago a stope was closed, and it was not entirely for safety reasons. It was because of the fact that it was a poor stope and there was no copper in it. That was one of the main reasons it was closed down; not because of safety.

Mr. ELLIOTT. Was it closed under the court action you describe in your statement here?

Mr. COLE. No. There have never been any stopes closed under court action in all the while I have worked for mining companies. They don't go that far, the mine inspectors don't, because it is too much trouble.

From looking over some of the records that he prepares for the board of supervisors, which we never see unless we go there to the county clerk's office and look at them, he is allowed 10 days a year to inspect old, abandoned shafts. And in one of his reports the man asked for more time to look over these old shafts, and it was refused because of the fact that it would cost the county more money, you see.

I certainly think it is a sad case that a man's life must be measured by the county treasury. They cut down the time of inspections to 10 days a year for old, abandoned shafts, and possibly 8 days a month to work in shafts that are activated. He only spends a half day of the eight inspecting, and he certainly cannot inspect most of the shafts that belong to Calumet and Hecla in a half day. It would take, in some cases, a day and a half to inspect one shaft. But he will make that half-day trip there once a month, and that is the sum total of it.

Mr. ELLIOTT. For the record, describe a shaft. What do you mean by a shaft?

Mr. COLE. The shaft is the mine, the mine that we work in. The shaft is a hole in the ground.

Mr. ELLIOTT. I am fairly well familiar with coal mining, but I am not familiar with the type mining you are describing.

Mr. COLE. I think it is different in some respects, but I imagine the shafts are similar. It is just a hole in the ground through which they hoist.

Mr. ELLIOTT. Do you cut rooms off the shaft?

Mr. COLE. Yes; drifts. And then there are stopes from the drifts. The drifts are horizontal, and the stopes are on about a 38° pitch.

Mr. POWELL. Locally the term "shaft" means all the workings of the mine.

Mr. COLE. Yes. You have No. 3 shaft and No. 4 shaft.

Mr. ELLIOTT. When you have worked out a shaft how do you close it? You made reference to the fact that your county mine inspector needed time to inspect these abandoned shafts. You said time was allowed, but not enough time.

What happens to a shaft when it is finished? Do you close it off or seal it off?

Mr. COLE. No, they don't. They merely erect a barbed wire fence around the collar of the shaft. The hole is still there. Anybody who wants to go through the trouble of crawling through the barbed wire can fall down the shaft. It is very simple. They never seal it off with concrete or anything. If they do they throw a few boards across it and that is left to rot.

Mr. ELLIOTT. Do you have any gas in these old shafts?

Mr. COLE. Oh, yes; there sure is.

I think it was in 1951 they decided to reactivate a shaft, and they were pumping the water out. They used a gasoline pump down in this shaft to pump out water, and it cost the lives of two men.

Mr. ELLIOTT. Was there explosion from the gasoline?

Mr. COLE. No. Carbon monoxide. The pump stopped, and the fellows went down to start the pump, and that was the end of it. There was no circulation. It was simply a hole in the ground and the pump was down there and it stayed right there, the carbon monoxide. It cost two men their lives.

And the mine inspector, of course, took no action whatsoever. In fact, he sided with the company by saying that the men were told not to go down there.

Well, the men are not here now to tell us whether they were or not. We have to take his word for it.

Mr. ELLIOTT. In Michigan you have no State mine inspection?

Mr. COLE. No.

Mr. ELLIOTT. And, of course, no Federal mine inspection?

Mr. COLE. No.

We certainly have tried in Michigan for a number of years, I believe since 1950, to have a State mine inspector. However, we have never been able to do it yet, and it certainly is a much-needed thing.

Mr. POWELL. Do you have any figures?

Mr. COLE. I have some of these figures here.

Mr. POWELL. Tell the committee how you obtained them.

Mr. COLE. I obtained these figures by going to the county clerk's office and going over the mine inspector's reports.

The list I have here shows the number of men employed underground only in one county, and the number of compensable accidents in the same year.

The number of men employed is oftentimes less than the preceding year, but still the accidents remain as high or higher.

For example, in 1951 the number of men employed was 619, and the compensable accidents were 4. In 1952 there were 608, and the compensable accidents were 31. In 1954 the number of men was 556, and the compensable accidents were 34. In 1955 we had 541 men employed underground, and a total of 40 compensable accidents.

So it is very obvious that some measures are needed. The accidents still stay up high although the number of men is lower, because of the increased danger in the retreating shafts.

We had 2 killed in 1950, 2 killed in 1952, 1 killed in 1954, and 3 killed so far in 1956.

Mr. ELLIOTT. How many counties in Michigan mine iron ore?

Mr. COLE. Iron ore?

Mr. ELLIOTT. Or copper. Excuse me.

Mr. COLE. Houghton, Ontonagon, and Keweenaw; three.

Mr. METCALF. Is that all, Mr. Cole?

Mr. COLE. Yes. Thank you.

Mr. METCALF. Just hold yourself in readiness here until the completion of all the testimony.

Mr. POWELL. May I depart just a moment to a small extent?

Mr. METCALF. I want you to handle this in any way you choose.

Mr. POWELL. Mr. Cole mentioned a very interesting thing, that they have never in Houghton or Keweenaw Counties experienced the closing of a mine by the mine inspector through court action.

I believe that the only case that has ever come to my attention occurred in Gogebic County, which is in the western end of the iron range.

Mr. Sanchez, will you enlighten us somewhat on that, as to the action taken by the prosecuting attorney?

This is Joseph Sanchez.

STATEMENT OF JOSEPH SANCHEZ, WAKEFIELD, MICH., MINER, SUNDAY LAKE IRON CO.

Mr. SANCHEZ. My name is Joseph Sanchez, 406 Hancock Street, Wakefield, Mich. I am a miner. I work for the Sunday Lake Iron Co.

What Jack mentioned here was this: We had one time—I believe it was in 1952—a terrible thing happened in a mine in Gogebic County where some men were trapped.

We have a safety committee under our contract. Under the contract we were entitled to a five-man safety committee, and we met with the mining company once a month. This was at the Penokee mine. It was brought to the attention of the company that this stope where the miners were working was in danger of coming down. They were mining the pillar. The pillar was holding up the capping of this stope. The stope was so high that when you put your light up there you could not see the capping rock on top.

The boys told the company that perhaps they should leave some of that pillar because someday the stope might come down and somebody was going to get killed.

Nothing was done about it.

So eventually the stope did come down, and several men were trapped.

The prosecuting attorney at that time was a fellow by the name of Ted Lawberg. He got an inquest. And, by the way—this for the record—is the first time in the history of the United States that an inquest was held in a mine fatality.

But the shaft, the mine, did not close. They kept operating just the same. There was no closing of the mine whatsoever.

And, as you know, the law as to inquests is that you must have a unanimous decision from the jury in order to uphold the decision of the inquest. There was no majority decision there. So nothing came out of that inquest.

But the mine kept on working, and they are operating the same as always.

Mr. POWELL. Do you have any figures that you might have in your mind or that you brought with you relative to the number of accidents, fatal or otherwise, in your county?

Mr. SANCHEZ. I haven't any such figures, Jack. As you said, we did not have any time to prepare ourselves. I was told the day before yesterday, when I got a telephone call, to come here on this hearing.

I have attended all the hearings in the Michigan State Legislature since this mine-safety bill was introduced. We wanted to get a mine-safety code in Michigan, and I have attended all the hearings.

Last year we had the greatest committee we have ever had up there. I believe every company in the Upper Peninsula with metallic workers was represented. And a very peculiar thing happened there.

When we held the hearings the mining companies did not have anybody appear before that committee. We appeared before the committee and gave our recital of the story as to why we thought we needed a mine safety bill, and gave the figures and the reasons. There was not anything said by the mining companies because there was nobody there.

The next day it happened that I got a telephone call. I was getting ready to pack and go home, and I got a telephone call saying I had better come up because they were holding a hearing for the mining companies.

So when I got to the room I guess I was the only man representing the workers left from that committee. The rest of them had already gone. I went to the room and I overheard what the company officials had to say, and I was very much shocked by one person who represented the companies. He got up in front of this committee and said:

> You know, we heard that you have all kinds of figures here about fatalities and accidents, but I want you people to know that the people working for us up there in the Upper Peninsula, the average, are pretty dumb. And we cannot afford to have a boss with each man to make sure they don't get hurt. For example, we had a fellow working who cut a finger off. The boss went over and asked, "How did you do that? How did you do that? I have got to make a report." So this fellow just put his finger in the machine and cut the other finger off to show him. That is the kind of guys we have got working for us.

I was shocked to hear a thing like that.

And the bill was killed in committee again, for the fifth time.

There is a peculiar thing that happened in our mine that I would like to tell the committee about. We have blasting powder and we have powderhouses underground. I got hold of the Federal Explosives Act, and it was very shocking to me to see that this Federal Explosives Act is only effective during war or emergency. There is wording in there that says:

> For the safety of employees this act will become effective in case of war or emergency.

This act says that the powderhouse should be locked and there should be an attendant there. Should he give the powder to any employee that comes there, he should make sure that this powder, if it is not used in the working place, is brought back to the magazine at the end of the shift, and it should be locked. This one man has the key. There should also be so many feet from the powderhouse to the working place.

And by the way, I know there are some cases in Marquette County where there were three fatal accidents in 1955 because of explosions. In another mine they have a main magazine or powderhouse that is unlocked and nobody taking care of this magazine.

The explosives to charge the shaft for rock work are electrical explosives, and they leave them about 6 feet away from the trolley line where the motors are going back and forth hauling the ore with open wires. There is a place where the magazine is in rock by the shaft, perhaps a half mile away from the working place. So in order to save time they have a wooden box filled with powder there, with powder on top of the box and powder on the ground right underneath the working places. I would say it is no more than 50 feet from the next working place. There is powder all over the place.

I happened to be on the safety committee, and I brought this to the attention of the company and said we should take care of this situation before something happens. The local officials agreed that it was a poor policy, and the superintendent said that he would take care of this.

So he started by putting a lock on the magazine. Two days later after the meeting he called me to the office and he said:

> You know I am sorry I won't be able to do anything about this because I was told by the head safety man of our company that the Federal Explosives Act is only in effect during war or emergency. So that hasn't anything to do with this. We are not violating any laws. Michigan has no safety code. So, therefore, we are not worried.

And the contract did not allow it. So the situation is still the same.

Mr. POWELL. Do you recall whether the mine inspector ever made a group of miners or a company clean up a situation relative to the sloppy handling of explosives?

Mr. SANCHEZ. We brought that up to the mine inspector, and he said that he seems to think that the only time he can do something about it is any occasion involving underground safety where it is actually involved in the working place. He said he hasn't anything to do with it. If the lock won't take care of it, how can he do anything about it. He says he hasn't got any authority.

Mr. POWELL. As a member of the safety committee did you ever accompany the mine inspectors on visits through the mine?

Mr. SANCHEZ. Yes. It so happens, Jack, that last Wednesday we did. The mine inspector usually comes with his assistant. One man from the safety committee goes with the mine inspector, and one man goes with his assistant. They take half of the mine each. We have got three levels. So one man takes the subs where you mine the iron ore, and goes with the mine inspector; and the other man goes with the assistant where they develop the rock. There are not so many working places.

This mine inspector we have in Gogebic County is 68 years old, and he has felt for the past 6 months that he cannot do any climbing. So this Wednesday, as I mentioned here, he sent his assistant. The assistant is taking care of the job.

Mr. POWELL. Mr. Chairman, if I may, I would like to say this is the first time I have ever heard of an assistant.

Who appoints the assistant?

Mr. SANCHEZ. The mine inspector in Gogebic appoints the assistant mine inspector to assist him.

Mr. POWELL. And then the assistant is not the man that we elect to office.

Mr. SANCHEZ. No.

Mr. POWELL. To make the inspections?

Mr. SANCHEZ. No. You elect the mine inspector, and he may hire anyone he wishes to be his assistant.

Mr. POWELL. Thank you.

Mr. METCALF. Is that all, Mr. Sanchez?

Mr. SANCHEZ. Yes.

Mr. METCALF. Does that complete the regular presentation of your testimony?

Mr. SANCHEZ. Yes.

Mr. POWELL. Thank you.

Mr. METCALF. Mr. Powell, I wish you would let me intervene here a moment.

We have a representative from the Bureau of Mines, and I think at this point it might be well to clarify what the Federal power of inspection for metal mines is.

I wonder if you would come forward, Mr. Johnson, and, for the record and the information of the committee, tell us what your duties are and your powers with respect to the inspection of the metal mines.

STATEMENT OF JOHN A. JOHNSON, CHIEF, DIVISION OF SAFETY, UNITED STATES BUREAU OF MINES, WASHINGTON, D. C.

Mr. JOHNSON. We have no power of inspection in metal mines. We have that power, I think you understand, in the coal mines.

Mr. METCALF. Yes.

Mr. JOHNSON. But that does not include metal mines, nonmetallic mines or quarries.

Mr. METCALF. You have no right of entry whatsoever into a metal mine unless it is purely voluntary?

Mr. JOHNSON. Yes. We have no right of entry. But we have never been refused entry in any mine.

Mr. METCALF. And when do you inspect the metal mines?

Mr. JOHNSON. We inspect the metal mines usually when our men go around to the metal mines and put on a national accident prevention course or first-aid course or mine-rescue course. During the time they are there they will usually take a trip underground with the safety inspector of the company.

On several occasions we have been asked by the companies to make an inspection of the mine and give them a report. We have done that.

Mr. METCALF. So your inspection would be advisory only, and largely at the request of the company?

Mr. JOHNSON. That is right. I would say those are maybe just a few a year because we do not have the staff, even if we were asked, to make them all. We do not have the staff to do it. Most of our work has been on educational work.

Mr. METCALF. There is neither a duty nor is there an authority on the part of the Federal Government and the Bureau of Mines Safety Division to inspect such a mine as was described by the previous witness?

Mr. JOHNSON. That is right.

I would like to add one word there. We do have the power of entry in metal mines in which the operator has a lease on public domain

such as down in the southwest where some of these uranium mines have obtained a lease from the United States Geological Survey. And we make the safety inspections for the United States Geological Survey, and send copies of our reports and recommendations.

Mr. METCALF. That would only be applicable to public lands?

Mr. JOHNSON. Public lands if operating under a lease given them by the United States Geological Survey.

Mr. ELLIOTT. Do you have the power, or do you in any manner compile and issue statistics on accidents in the metallic mines?

Mr. JOHNSON. We do. We get, each year, from the mining companies a form, a regular form that is sent in to the Bureau of Mines, and our branch on accident analysis then compiles those and they are put out in information circulars or bulletins and so forth. That is voluntary on the part of the companies. We do not have much trouble collecting that from the larger companies, and that comes in every year.

Mr. ELLIOTT. Do you feel the statistics you keep on accidents in the metallic mines are reasonably and fairly accurate?

Mr. JOHNSON. We do. However, we do not get as good coverage as we probably could get from the smaller mines. And the reason there that is sometimes given is that they do not have the clerical help to do it. But we can cover the larger mines. And I would say the percentage of coverage is large enough so that the statistics we put out are reasonably accurate.

Mr. ELLIOTT. I wonder if you would furnish, for the record at this point, a statement of the accidents and deaths that have occurred in the metallic mines over the period of the past 10 years, year by year, and broken down by the various States. Could you do that?

Mr. JOHNSON. I think we furnished something. I do not know if it covers this or not. Before we left Washington we furnished some statistics, and I do not know if it covers just what you asked for, but it was similar to that. If it does not, we will be glad to furnish it.

Mr. METCALF. As you know, Mr. Johnson, we have discussed your appearance and the appearance of others in the Bureau of Mines at some later date. And you have already furnished material to the committee, some of which has not been inserted in the record. But before these hearings are concluded they will be incorporated.

Mr. JOHNSON. We will be glad to furnish it.

Mr. METCALF. And if the material that has been furnished is not sufficient, Mr. Elliott, we will request additional research.

I wanted this matter of the Federal authority or Federal power to be brought out here, and that is the reason I made this interruption.

Mr. Johnson, I thank you for putting that in the record.

Did you have an inquiry to make, Mr. Powell?

Mr. POWELL. I would like to ask Mr. Johnson a question.

Mr. METCALF. I will be glad to let you ask a question.

Mr. POWELL. Mr. Johnson, as to the invitations for making inspections that do come to your department, are not a large number of those made for the purpose of having you conduct your geophysical tests to determine stresses and strains that are being put on the ground? Are not your inspections largely for that purpose?

Mr. JOHNSON. I would not say that, Mr. Powell. That does not come under my division, but we do have a man who is a physicist, and

he has done a lot of that work in the copper mines and iron mines. He has also done that out West. And that is for the purpose that you describe; that is true. But that does not come under the work I describe as our safety educational program. That is a little different division of the work.

Mr. POWELL. Your safety educational work is largely toward mine rescue training and first-aid training and so forth?

Mr. JOHNSON. And accident prevention; that is right.

Mr. POWELL. Thank you.

Mr. METCALF. Thank you very much, Mr. Johnson. And, of course, we will look forward to your continued advice and guidance in your future testimony.

Mr. JOHNSON. Thank you.

Mr. METCALF. Thank you for permitting me to interrupt you, Mr. Powell. You may proceed to call the rest of your witnesses.

Mr. POWELL. Mr. Sanchez, in his testimony relative to explosives, made reference to three fatalities in Marquette County, Mich., during the last year. I would like to have those elaborated on just a little bit by one of our safety people and one of our legislative committee who was present in the investigation of those, and who will testify to the fact that no code exists for the handling of explosives.

Mr. Airandi, give your name, what you do, and where you live.

STATEMENT OF AMBROSE AIRANDI, NEGAUNEE, MICH., CONTRACT MINER, MATHER-B MINE, CLEVELAND CLIFFS IRON CO.

Mr. AIRANDI. Ambrose Airandi. I live at 15 Ann Street, Neguanee, Mich. I am a contract miner in the Mather-B mine for Cleveland Cliffs Iron Co. in Negaunee.

Mr. POWELL. A contract miner. That means work on an incentive?

Mr. AIRANDI. Incentive rate. Contract miner and incentive are the same. I work in rock and iron ore.

The case that Jack referred to happened on October 10 in 1955. I was called at about 9:30 in the evening by the manager of the mines in Michigan, and asked if I would like to go along with the safety committee and inspect the death in an accident of two of our members that are employees, a blasting accident that happened at the Monterey mine in Ishpeming.

We went underground at 10 o'clock in the evening, and nobody seemed to know what had happened. The boss had not made his rounds and gotten into this certain area where the blast had gone off. They did not know if the men were in there because the ore back of the drift had come in. They couldn't find anybody. They had men there looking for them for about 3 hours, and then finally decided at the time when they called us in that there was somebody buried in this blast.

I don't know how I can explain how this blast occurred. They have a pick-a-back drift that is over the drift on the main level, and they have sets above. Every 25 feet they have hauling drifts or stope-scraping drifts where the men haul the ore out of the mills. It runs down every 20 feet apart.

It happened that at one of these mills the stope scraper that the man was hauling the ore out with hung up. So he used what they call bombs. They are 5 by 5, high-pressure dynamite, 90 percent

gelatine high pressure. That is very powerful. And he was working alone in this place. And this Mr. Anderson and Mr. Frederickson, the two that were killed, were on the opposite side. I would say there was about 22 or 23 feet of ground between the two. They were coning out another mill just opposite where the scraperman was going to blast. They had 2 or 3 holes charged up with primer cord. The dynamite they were using was 1¾ by 24 inches long. They had holes drilled and they drill them out to cone out the small raises about 4 feet in diameter. They cone it out so the ore can run through.

They had 2 or 3 holes charged up with primer cord, and this stope-scraper man had come over and told them he was going to blast. He did not think there would be any safety features on it.

These two miners wanted to have their lunch, and they wanted to make their blast, and they said to go ahead. But when this blast went off it went through the ground. It was cracked, and it went through the ground and hit the primer cord, and the primer cord came right out of the holes. They had two boxes of dynamite of about 50 pounds, and they might have had I don't know how many pounds of powder at their feet at the bottom of the drift. And that blew up.

As to Mr. Anderson, I think the largest piece they found of him was maybe 20 or 25 pounds. He was a man of 46.

Rupert Frederickson was a young man of 28, and they found more of him. He was over in the drift, maybe a little further away.

But what I am getting at is that after this happened the company posted a notice on the bulletin board that they should not blast within a hundred feet of any such charging-up, or that there would be no more blasting within 150 feet.

It seems to me that the horse was out of the barn. Two men were killed.

There aren't any safety rules that I know of on the handling of dynamite or blasting. As a matter of fact, I go along with the company safety inspector when he comes in about once a month or once in 2 months.

We have some oldtimers who were transferred in from another mine. They have never used electric blasting that we use. And we found a stope-scraper man doing the same thing, using a bomb. He had the lead wire running in and it was tangled with the cables of the electric puffer, a hoist they pull the dirt with. He did not have the end shunted. He had hooked the wires onto the lead wire and pushed it with a stick. We call them sticks. They are second-growth hardwood. You push it up in the chump. He would not use the primer cord the way we like to see it.

We asked him, "Don't you know any better?"

He said, "No. I have never used electric blasting. We always had dry fuse over there."

He had transferred from the A to the B.

The safety inspector of the company jotted that down. I happened to be with him when he came out of the shaft, and he got hold of the shift boss and the second captain, and he gave him a good raking over.

And I have to explain to you people that this man was about 55 to 58 years old. He had been working in a mine for many years but had never used electric blasts, and nobody had instructed him in the use of electricity.

It could have happened that there was a bare wire. This is rubber-covered, but it could be bare. They pulled off a roll or reel and they use it many, many times for blasting. If it was bare and there was a little bit of electricity going through this cable coming off the electric hoist—the hoist was not running but it could be—and when he had this 5 by 5, which is 5 pounds of 90-percent gelatine high pressure, I don't know what would happen. They would probably pick up his shoes off the ground and that is all.

We had another one at the Mather-B mine on August 29, 1955, where Wilfred Mallette, Jr., was injured. We didn't know what happened there. A hole or two went off. His partner, who was just on the top timber about 40 or 50 feet away, Gene Currie, came down. He was cut about the face. When the blast went off it hit Wilfred Mallette in the groin and cut both of the arteries. He bled to death within minutes.

This Gene Currie had got 2 of the other miners, and these 2 miners came up and Mallette was trying to get going with his hands. He was a young man. I think he was about 26 or 27 years old and 6 feet 5.

And then the rest of the holes started going off, and the other two miners were injured, too. They didn't know what happened, whether it was a premature blast or whether it was the fuse. They were blasting with dry fuse. There was an interval of maybe 3 or 4 minutes after this blast that hit Mr. Mallette when the rest of the holes started going off. There were seven that weren't lit that went off.

They didn't know really what happened.

Our union safety committee asked through a regular union meeting of our people for the company to outlaw dry fuse in the entire mine at the Mather–B. Some of the other mines don't want that, but we want it when some of our boys get killed.

The company refused, and they still have the fuse.

There are a lot of arguments pro and con. I don't know what happened there. We thought that the fuse could have had some defect in it, and we had the company and our committee take a lot of the fuse out, and we burned it and everything was right on time.

Here are three accidents that have happened that I think indicate that if we had a sort of code on the handling of dynamite and who should handle it, it would be better. I have a son that started in the mine and worked there three weeks and they put him up in a stope all alone. They said, "You go up there and pull dirt."

Well, he had to blast. He didn't know any more about dynamite than I know about anything else. However, he made it all right. But I went in to see the captain of the mine, and I said, "This is my only son in here, and I don't want him killed."

But that is the way it works, that just about anybody in the mine can use dynamite.

Mr. POWELL. May I ask you this question, because I would like the committee to know this:

You do have safety books issued to you by the company, safety rules?

Mr. AIRANDI. Yes.

Mr. POWELL. Do they tell you what you may not do or do they tell you how to do the things you have to do?

Mr. AIRANDI. Well, the safety books tell you what, like on blasting——

Mr. POWELL. They tell you what not to do?

Mr. AIRANDI. They tell you what not to do. Don't go in until a half hour after you blast. And what to do with missed holes.

On some of the accidents we have talked to the safety committee, and they have instructed the miners on blasting, but they didn't take the other greenhorns.

Mr. POWELL. But basically the safety rules that are given you do not constitute a code or set of instructions in any way?

Mr. AARANDI. No.

Mr. METCALF. Mr. Powell, can you provide the committee with a copy of those safety rules?

Mr. POWELL. I don't have them, but I will before the final date.

Mr. METCALF. Will you send them to the clerk of the committee?

Mr. POWELL. We will see that you get them, and make them available.

Mr. AIRANDI. Thank you, Mr. Chairman.

Mr. METCALF. Thank you, Mr. Airandi.

Mr. POWELL. Mr. Sanchez, did you have something on safety rules right now?

Mr. SANCHEZ. I would like to say something about this safety book that Jack is talking about.

Mr. METCALF. Come forward, please.

STATEMENT OF JOSEPH SANCHEZ, WAKEFIELD, MICH., MINER, SUNDAY LAKE IRON CO.—Resumed

Mr. SANCHEZ. The safety books that the company put out were put out during the war because they had to more or less be in conformity with the Federal law.

There is no such thing as safety books any more in our county. They don't give us the safety books that were given out during the war to keep within the Federal laws. There is no more Federal law, like I mentioned before, on the Explosives Act.

Mr. POWELL. The safety rules you might have are now all out of date?

Mr. SANCHEZ. That is right.

I used a mine safety book during my argument with the company, and I was told, "You notice that was as put out in the years during the war, and that is why we did it. We are not giving those books out any more."

You have no comeback as far as that is concerned.

Mr. METCALF. Mr. Sanchez, did you work for this company during the war?

Mr. SANCHEZ. No, sir; I did not.

Mr. METCALF. You started working for the company after the war?

Mr. SANCHEZ. After the war.

Mr. METCALF. When you went to work for the company were you given a safety book?

Mr. SANCHEZ. No, sir.

Mr. METCALF. And you have never been issued a safety book by the company?

Mr. SANCHEZ. No, sir.

Mr. METCALF. Have you been given any instructions by the company?

Mr. SANCHEZ. Yes. When I first was hired, before I went to work, they had a safety man they called him who gave instructions on what not to do, and the situations underground, as to what you might be doing someday. But, Mr. Chairman, you know how much you might get in a discussion like that if you have never been underground and they start talking about a shaft and drilling and primer cord. You don't get much out of that.

Mr. METCALF. But you have supervision that is constantly checking your activities in the mine and telling you when you do something wrong. Is that correct? Don't your bosses tell you when you violate some safety rule or regulation?

Mr. SANCHEZ. Yes, sir. That is one of the main reasons why I personally think we should have a safety code because the only time that they look at safety is when it does not interfere with production.

I know for a fact when we have miners working in rock and the bosses themselves go with the motor and put boxes of powder on the motor with explosives readymade—these fellows that are cleaning house. The boss goes back and gets the stuff and makes sure they get it.

So far as the supervisors looking for safety is concerned, they do it if it does not interfere with production. But any time it interferes with production—and I am talking from experience in my own mine—there is no such thing as safety. I know.

It said in these books, that the company had during the war, that after a missed hole you must stay out 1 hour. And in all cases you don't go in there in less than half an hour.

I know where the boss has ordered a man to go in there after a blast before the smoke was out of there.

I just wanted to clear that up.

Mr. POWELL. Thank you.

Mr. METCALF. Thank you, Mr. Sanchez.

Mr. POWELL. Mr. Chairman, we have one of our witnesses who was diligent enough and successful enough to be able to bring a few copies of the mine inspector's report made in Iron County, Mich. The rest of the witnesses were not able to obtain those copies because of the fact that the county clerk says they are not available for our use.

So I would like to call William Koponen.

STATEMENT OF WILLIAM KOPONEN, STAMBAUGH, MICH., MINER, M. A. HANNA CO., IRON RIVER, MICH.

Mr. POWELL. Tell them your name and where you live and what you do.

Mr. KOPONEN. My name is William Koponen. I live in Stambaugh, Mich. I am a miner, and work for the M. A. Hanna Co., in Iron River, Mich.

I have here a set of mine inspector's reports. They are reports that he makes to the county board of supervisors. I do not have all the years. There are some years missing. I have from 1942 through 1954, and 1944 is missing.

To go over some of the accidents that have happened, we had in 1942, 4 fatal accidents and 111 lost-time accidents. In 1943 we had

11 fatal accidents and 201 lost-time accidents. In 1945 we had no fatal accidents, and we had 75 lost-time accidents. In 1946 we had 2 fatal accidents and 57 lost-time accidents. In 1948 we had 3 fatal accidents and 59 lost-time accidents. In 1949 we had 3 fatal accidents and 60 lost-time accidents. In 1950 we had 2 fatal accidents and 40 lost-time accidents. In 1951 we had 2 fatal accidents and 42 lost-time accidents. In 1952 we had 8 fatal accidents and 48 lost-time accidents. In 1953 we had 1 fatal accident and 56 lost-time accidents. In 1954 we had 1 fatal accident and 44 lost-time accidents. And so far in 1956 we had 2 fatal accidents, and we do not have a report on the lost-time accidents.

If you wish, we will submit copies of the mine inspector's reports.

Mr. METCALF. Yes; are those filed with your office, Mr. Johnson? These local reports?

Mr. JOHNSON. They are in Mr. Look's Duluth office. Mr. Look has them, but I don't think I have a complete set in the Washington office.

Mr. METCALF. Those reports become a part of the entries in your reports that you issue on your annual Federal report. Is that correct?

Mr. JOHNSON. We do not take our statistics from the county mine inspector's reports because some of the county mine inspector reports are complete and some are not.

Mr. METCALF. You compile your statistics from the reports and information that is supplied by the companies?

Mr. JOHNSON. That is right. We have a standard form, and they all use the same standard form. Therefore, we get uniform statistics, and that is why we use those forms.

Mr. METCALF. Those reports will be accepted and kept in the committee files for reference, but will not be incorporated or printed in the record. We appreciate having you supply the material.

Mr. KOPONEN. All I can add to it is that we are desirous of having a safety code covering our iron ore mines and copper mines. We see no reason why we cannot have such a code. The coal mines are covered by a safety code, and our good neighbors in Canada, Ontario, Canada, have a set of rules governing all mines.

This is a book that was put out and the law enacted in 1949 in Canada covering all mines. It does not pick out a coal mine and exclude iron ore mines. It covers all mines.

I repeat once again that such a code is very desirable to help insure safety for people working in the mines.

Thank you.

Mr. METCALF. Thank you.

Mr. ELLIOTT. Would he leave the Canadian law here?

Mr. METCALF. If you have additional copies, would you leave that Canadian code? If not, I will instruct the staff to obtain one for the committee.

Mr. KOPONEN. If this was my own book I would be glad to leave it with you, but it does not happen to belong to me.

Mr. METCALF. Mr. Derrickson will obtain it for the committee.

Mr. KOPONEN. You can obtain these. We have an address right here on the book if you would care to take the address from me.

Mr. METCALF. He will take care of that.

Mr. KOPONEN. You can take this now if I can get it back.

Mr. METCALF. We will be able to get it. Thank you very much.

Mr. Powell, do you have another witness?

Mr. POWELL. We have one other witness. He will wind it up.

Before I call him, I would just like to refer to this matter that might concern this testimony this morning. This does not cover Minnesota or Wisconsin. It is my understanding that you have already had a very extensive tour of the Minnesota iron ore area, and you have taken testimony presented by Mr. Swanson and some witnesses which should cover Minnesota.

I do not feel that our committee this morning is qualified to testify on behalf of Minnesota.

But insofar as Wisconsin is concerned, this area is affected very little by Wisconsin metal mining. In other words, we have just a small corner of Wisconsin that touches the Gogebic range that is about 112 miles east of Duluth, and that iron ore formation dips into Wisconsin slightly.

We had asked one of the local union people to come here and testify, and he was unable to come. But he informed me that the State of Wisconsin sometime ago enacted a code of safety practices for metallic mines. The code was not adopted just to cover this little group of iron mines in northwestern Wisconsin but was primarily introduced and passed to cover the metal mines down in the southwestern part of the State where they have lead mines and some other types of operation.

So Wisconsin is farther ahead than either Michigan or Minnesota. And Michigan is farther behind that any other State perhaps in the Union.

Except for the unilateral efforts that have been made by the companies themselves to cut down their compensation rates, we might say, there is nothing like safety in Michigan.

The next witness will, in the course of his testimony, touch upon a phase of this program which does not relate entirely to the employees who work in the underground mines, but will, on the other hand, point out that there are other people, the public itself, that need protection through the adoption of a code of safety practices because there are instances, as described by Mr. Cole, where the company abandons a mine and puts a few strands of barbed wire on posts around the open shaft. Such practices have existed throughout the iron country of Michigan during the last 100 years of the operation of the iron ore mines. There have been many fatalities resulting because of these abandoned mines, concerning children mostly, because where ground subsides around a mining area and fills up with water it becomes an attractive nuisance, you might say. The children like to go there and swim.

And there are other cases where the subsiding of ground will make a very, very fine sliding place in the wintertime up here because we have lots of snow, you know, and those banks are quite precipitous. The kids with these flying saucers and sleds and skis get out there and slide on them. Because we do have so much snow and because there is quite a bit of wind, sometimes the wind will blow the snow out over the lip of the cave, and it will form a cornice and there will be many, many hundreds of tons of snow that will be hanging out over the slope where the kids are sliding.

Just a short time ago, some 4 years ago, 2 children lost their lives, and 1 was saved because he was able to crawl out of the tumbling snow. That was just from sliding on these snow-covered banks. The kids can get in there because there are only a few strands of barbed wire around it.

Then in 1953, in June, a 6-year-old child toddled across the street, or ran across the street with a playmate from his home. There was a broken-down barbed wire fence around one of these pools formed by a subsiding. The child fell in there, into the water, and just kept on going down because there, unknown by most of the people in Marquette County, was a shaft that had been abandoned more than 50 years ago which was hidden by the surface of the water.

It took them several days—I believe 9 or 10 days—to pump enough water out of that place and repair it enough so that a diver could go in and recover that child.

This is all part of the same program. And, if the committee will permit me to introduce a newspaper story, which includes some pictures, I would like to have that made a part of the record, too.

Mr. METCALF. We cannot reproduce the pictures.

Mr. POWELL. No; but the committee may have them.

Mr. METCALF. Without objection, the stories from the two newspapers will be introduced at this point into the record.

Mr. POWELL. Thank you.

(The material referred to follows:)

[The Mining Journal, Marquette, Mich., June 19, 1953]

GOVERNOR WILLIAMS WILL DIRECT LABOR OFFICE TO MAKE STUDY OF JACKSON SHAFT ACCIDENT

NEGAUNEE.—Governor Williams will direct the State department of labor to "make a complete survey" of a case involving the drowning of a 6-year-old Negaunee boy in the abandoned shaft of the old North Jackson Mine.

He made that statement yesterday after inspecting the shaft and other pits in the Negaunee area.

NINE-DAY SEARCH

The Governor said he will ask the labor department to make recommendations after its study and to make any findings of the survey available to the State legislature for that body's consideration.

Dale LaFreniere, son of Mr. and Mrs. Donald LaFreniere, disappeared in the old shaft last June 6. His body was recovered last Monday after 9 days of pumping operations by crews employed by the Cleveland-Cliffs Iron Co., owner of the property on which the shaft is located.

"These (open pits) are what are known in law as 'attractive nuisances,'" the Governor remarked.

CITES MINE INSPECTOR LAW

He said owners of property on which these pits stand have a responsibility to the public and that mine inspectors also have a responsibility "to see that safety measures are carried out as the law indicates."

The law referred to by the Governor is act 163 of 1911, and amendments thereto, relating to copper and iron mine inspectors. The law states, in part: "When any mine is idle or abandoned it shall be the duty of the mine inspector to notify the person, persons, or corporation owning the land on which any such mine is situated, or the agent of such owner or owners to erect and maintain around all the shafts and open pits of such mine a fence or railing suitable to prevent persons or domestic animals from accidentally falling into said shafts or open pits."

MORE STRINGENT ENFORCEMENT

Governor Williams said, "It may be that existing legislation is inadequate, but I think what is needed is more stringent enforcement."

The property in question was purchased by Cleveland-Cliffs in 1905. At the time of purchase, the North Jackson shaft had been idle about 25 years. The shaft never was operated by Cleveland-Cliffs.

The Governor, who made his tour of inspection here after addressing a State nurses convention in Marquette, left yesterday for Cadillac, where he spoke before the Michigan United Conservation Clubs convention, and Ludington. He was scheduled to be back at the Governor's summer mansion on Mackinac Island today.

[The Mining Journal, Marquette, Mich.]

PUMPS BEING USED TO DRAIN MINE PIT WHERE NEGAUNEE BOY DROWNED ON SATURDAY

NEGAUNEE.—Pumping operations continued at a mine pit here today in an effort to locate the body of a 6-year-old Negaunee boy who is believed to have drowned there Saturday afternoon.

Seven pumps were being used in hopes of finding the body of Dale LaFreniere, son of Mr. and Mrs. Don LaFreniere, Jackson Street.

Search for the body began early Saturday evening after an 8-year-old boy who had been playing with Dale pointed out the spot where he said the youngster went into the mine pit which is located across from the Viga Bowling Alleys on Iron Street. A mine shaft formerly stood on the spot where Dale reportedly fell into the water.

The fire department, summoned Saturday evening, attempted to recover the body with pipe poles. First department members worked all Saturday night in a futile attempt to find the body. They were relieved at 9 a. m. yesterday by Cleveland-Cliffs Iron Co. workers.

Four of the pumps being used in the draining are owned by Cleveland-Cliffs. The other three were obtained from the Brebner Machinery Co., Marquette.

Mr. POWELL. I would like to call Ernest Ronn. And then when he has finished I just want to make one more brief statement, and I believe we will have made our presentation.

STATEMENT OF ERNEST RONN, NEGAUNEE, MICH., MINER, CLEVELAND CLIFFS IRON CO., NEGAUNEE, MICH.

Mr. METCALF. Mr. Ronn, will you give your name and address?

Mr. RONN. Ernest Ronn, 20 Eye Street, Negaunee, Mich.; miner for Cleveland-Cliffs.

Mr. METCALF. You have a prepared statement?

Mr. RONN. I have. But, rather than read the statement, most of this has been covered by Jack and the other witnesses.

Mr. METCALF. Without objection, Mr. Ronn's prepared statement will be placed, in its entirety, in the record at this point.

(The statement referred to follows:)

I am Ernest Ronn, president of local 4950, United Steelworkers of America. I have worked in underground iron mines for 11 years.

I am chairman of the legislative committee of our local. I am here to present the committee's experiences in attempting to obtain better safety legislation for the people living and working in the mining areas of Michigan. I also wish to present our opinions of the present county mine-inspection system.

Our first experience with this problem was in 1952. The State labor committee was taken on a tour of the two newest and most modern iron and copper mines of upper Michigan. Due to this tour they felt that a better safety bill was not needed.

We feel that this tour did not give a true picture of the safety and other conditions in the mines. They were shown only the main drifts and a very few of the hand-picked places. They also were not accompanied by anyone besides the mine officials and the supervisory personnel.

Citizens and workers also testified at a public hearing on the unsafe conditions, both in the mines and mine areas.

A safety bill has been presented in the State legislature for many years and has been killed in committee each time.

In 1955 a committee of men, experienced miners from all the mine ranges in upper Michigan, attended a public hearing before the committee on State affairs in the Michigan House of Representatives. No mining company representatives showed up at this meeting to discuss, openly, the mine safety issues. The only opposition presented by the mining companies was a mimeographed form presented to the State affairs committee, the day after the public hearing. Also in 1955 a form letter was sent to the committee by a firm that manufactures doors in the State of Michigan, stating that any mine safety bill would be patronage.

Regardless of actual testimony, news clippings, photos, and reports on lost time and fatal accidents given by the citizens committee, the bill died in committee because of the mining companies' letters and a letter by this company which is in no way involved with mining.

In 1956 we appeared before the labor committee of the House of Representatives of the State of Michigan. Once again we urged the committee to bring a mine safety bill to the house floor for debate and a vote. We presented evidence of unsafe practices, conditions, and tragedies which had taken place since our 1955 report. Again the mining companies did not send representatives to give testimony or debate the issues with us on the scheduled hearing date, but appeared a day later for a special hearing. As in 1955, this bill died in committee.

The following statements show why we feel that our present system of county mine inspection is inadequate, outdated, ineffective, and unjust to the people living and working in the mining areas:

When it is possible for a 4-year-old boy to fall into an old mine shaft and drown, within a hundred feet of the main street of a town and about 400 feet from his home, we need better safety laws.

In the winter of 1954 two young boys lost their lives when sliding in an old mine caving. These boys were buried and suffocated by a fall of snow from the upper ledge of the caving which should have been adequately fenced.

We feel that when a man builds a home on property sold to him by the mining company and has his front lawn cave in because of improper capping of an abandoned mine shaft, that this is also an unsafe condition.

These are just a few of the hazards confronting the residents of the mining communities.

Our present system of mine inspection calls for inspection once a month. We have 14 mines working in our county and it is impossible for 1 man to check each mine completely in such a short period. It is also impossible for him to recheck an unsafe place to see if the company has corrected the condition unless we have a code or law enforcing its correction. Years ago, when the county mine inspection was put into effect, there were less men involved and conditions and the system of mining were entirely different.

We feel that sanitary toilet facilities and adequate drinking water underground should be furnished as in any other industry. These two needs are not presently available underground.

For the record we enclose the following reports taken from the Annual Report of Inspector of Mines for Marquette County, Mich.

Accidents

Year	Fatal	Nonfatal	Men employed
1950	3	232	3,351
1951	3	261	3,691
1952	4	256	3,394
1953	2	215	3,939
1954 [1]	2	166	3,575
1955	3	192	3,131
Total for 6 years	17	1,322	

[1] 1954 schedules of mine operations were reduced to a 32-hour week.

FATALITY RECORD

Year 1950

1. On January 13 at 10 a. m., Nestor Blomquist, a miner, was instantly killed by a fall of ground at the Cambria-Jackson mine. The accident occurred on a

mill sub 15 feet above a transfer drift. Blomquist was barring loose ground with the intention of making the place safe, and when barring, a chunk at the edge of the stope, near its entrance, fell and struck Blomquist causing fatal injuries. Nestor Blomquist was 53 years of age and leaves a wife.

2. At approximately 9 p. m. on October 28, 1950, Mr. Jack Hill, miner, was fatally injured at the Maas mine, Negaunee, Mich. The accident occurred on the —50 sublevel from a fall of ground. It is believed that Hill was standing under timber when a chunk of ore fell from the back, striking a pile of ore and rolled against Hill's legs, which pitched him forward at about the same time as another chunk fell from the back, striking him across the neck and shoulders. Death came within a few minutes after he was injured. Mr. Hill was 26 years of age and leaves a wife and two children.

3. Wallace Hewitt, a mine at Mather mine, B shaft, was struck by a fall of ore in a raise while on a ladder and fell 65 feet, causing instant death. The accident occurred at about 3 a. m. on December 12, 1950. Hewitt and his partner were working in an exploration raise above the —70-foot transfer sub. Hewitt was standing on a ladder a short distance below a cutout when his partner was about to move or lower the drill machine. A small piece of ore broke loose from the back of the raise over Hewitt's head, striking him and causing him to fall down the raise. It is believed that water had seeped in behind the chunk to loosen it. The raise had been trimmed and barred to be made safe shortly before the accident occurred. Hewitt was 29 years of age and is survived by a wife and daughter.

Year 1951

1. On June 10, 1951, Paul Leonard Grund was fatally injured in the Cleveland-Cliffs Iron Co.'s Lloyd mine. Grund and his partner were cutting a raise and had proceeded to the point where raise sets were to be installed. While in the act of hoisting and landing of timber in the cutout, a piece of broken ore from the hanging side of the raise fell and struck Grund. Grund was 24 years of age and is survived by a wife and one daughter.

2. On October 10, 1951, at 4:30 p. m., Harry J. Huhtala, a miner for the North Range Mining Co., was instantly killed by a fall of ground at the Blueberry mine. The accident occurred on a slicing sub, 16 feet above the 12th level. Huhtala and his partner were engaged in drilling over the breast of the slice. They had completed 14 holes when a large slab of ore peeled from the breast, and fell against Huhtala causing fatal injuries. Mr. Huhtala was 47 years of age, and leaves a wife and one son living in Negaunee.

3. On November 28, 1951, Robert E. Lerlie was fatally injured in a sand bin of the concrete-mixing plant on surface at the Mather B shaft, Cleveland-Cliffs Iron Co. Because there was frost and the sand was a little damp, it required barring to cause it to slide into the chute and measuring bins. Lerlie was engaged in this work when he either fell into the bin or stepped onto the sand in the bin and the sand caved, covering Lerlie, causing fatal injuries. Lerlie is survived by his father and stepmother.

Year 1952

1. Louis Terzaghi, a timberman, was fatally injured on January 29 when he was squeezed between an air-lock door and the door frame at the Athens mine. Because a timber repair crew had blasted and broken the compressed-air line just previous to the accident the air-lock door could not be operated by the usual method of compressed-air power. Terzaghi and his partner had filled a car of rock and intended to haul the loaded car to the shaft. On reaching the air door they decided to open it by attaching a chain from the electric locomotive to the door. This was done but somehow the chain slipped and the door struck Louis Terzaghi who had stepped between the door and frame. Because the manway doors had not been opened there was enough air pressure on the air-lock door to cause fatal injuries to Terzaghi.

2. In an unusual accident at the Maas mine on April 2, William Copley, age 26, company account miner, was fatally injured when a loaded rocker-type car dumped its contents on him. Copley together with a number of other men had pulled the loaded car from under a chute where the wet ore had overloaded the car and partly filled the drift. The locomotive pulled the car from the crosscut to the main haulage drift, then pushed the car inside to another crosscut where the crew intended leaving the car. As the car was brought to a stop it suddenly dumped with the contents spilling on four men, including Copley who were sitting on a bench on the side of the drift. Apparently Copley had his

shoulders against a timber and a chunk of ore struck his chest causing fatal injuries from which he died after reaching the hospital. Copley is survived by a wife and son.

3. Vito Roti, age 57, contract miner, was fatally injured in the Mather mine A shaft on April 1 when squeezed by a chunk of ore in the mouth of a mill. A number of large chunks of ore had blocked up the mill opening and when barring did not loosen them Roti and his partner decided to blast the chunk loose. Roti placed the powder charge on one of the chunks and probably noticed that one of the chunks moved and in trying to move out of the way he possibly slipped and fell into the mouth of the mill into the path of the chunk which came to rest on his shoulders and neck. Death was instantaneous. Roti is survived by his wife.

4. Arvo Sippola, 26, a contract miner at Mather A shaft, received injuries in a mechanical loading accident on October 13 which caused his death. While Sippola's partners had gone to the shaft with a train of loaded cars, Sippola started loading rock with a mechanical loader. He had completed the loading with the exception of 1 or 2 dippers of rock when he ran the loader over the end of 1 of the slide rails and at the same time the dipper caught in a ledge of rock in the lower right side of the breast causing the loader to tip and pinning Sippola's chest between the conveyor of the loader and a sprag which was inserted between 2 steel sets. Sippola is survived by his wife and two children.

Year 1953

1. On May 28, 1953, I was called to the Tracy mine in Negaunee, Mich., to investigate a fatal accident to Paul A. Mikolozicyh, who was killed while putting up a section of steel in a trench. His home was in Vulcan, Mich. He was born there October 13, 1912. He leaves a wife and two children.

2. On August 20, 1953, Otterino Catto was fatally injured in the Negaunee shaft by a fall of ground. Catto and an assistant had noticed some loose rock, in a point of pillar on the 14th level cage plat, overhanging the skip pit raise. Because considerable concrete work had been done in this area the walls of the pillar had a thin coating of cement which made it difficult to detect loose rock. Catto and his partner took turns barring the loose rock to make conditions safe and while in the act of barring a small piece of rock about 3 feet above the floor of the plat, a larger piece from above let loose and struck Catto causing fatal injuries. All the ground had been tested and sounded but because of its large size this one section of pillar sounded solid. Catto was 45 years of age and is survived by his wife and 2 daughters.

Year 1954

1. On April 22 I was called to the Champion Mine, Champion, at 10:30 a. m., to investigate a fatal accident to Russel W. Jalava who was running down cars from the shovel loading cars from the stockpile on surface onto a switch. There was lots of grade. He was riding the front end of the car when the brake stick broke and he fell off amputating both his legs. He failed to have his safety belt on which was found nearby. He died in the Twin City Hospital at 7:30 that evening. Mr. Jalava was a married man and leaves his wife, two children, and his father. He was born October 15, 1915. Address, Box 83, Michigamme, Mich.

2. On May 23 I was called to the Blueberry Mine at Dexter to investigate the fatal accident of Fred Pracey when he fell down a 160-foot raise. At the time of the accident Pracey was working with his partners on the 1,450 foot sublevel, and were preparing to hoist timber to the top of the raise, and for some reason had the landing gate and the safety doors open. Pracey's partners said that his hat fell off and in reaching for it lost his balance and fell in the raise. He was killed instantly. He is survived by his wife, daughter, and son.

Year 1955

1. On August 29, 1955, I was called to the Mather B mine in Negaunee to participate in the investigation of a fatal accident. Wilfred Edward Mallet, Jr., was fatally injured by being caught in a blast in No. 68 contract on the seventh level. Mallet and his partner, Gene Currie, were driving a drift in ore and were in the process of lighting a cut in this drift when blast occurred. There has been no concrete evidence discovered or testimony received to determine the cause of this fatal accident.

2, 3. On October 10, 1955 at approximately 9:45 p. m., I was notified about a fatal accident at the Mather A mine in Ishpeming. Two men died instantly in a blast, in No. 7717 transfer drif on the-925 sub of the seventh level.

They were: Henry Elmer Anderson (46), Route 1, Box 927, Negaunee, Mich. Rupert M. Frederickson (28), Route 1, Box 665–J, Ishpeming, Mich.

Anderson and Frederickson were working in No. 7717 transfer drift, 114 feet east of No. 7 crosscut, on the –925 sub of the seventh level. A stope scraperman was pulling dirt in the next transfer drift, No. 7718, 16 feet south and running parallel. The scraperman was pulling from No. 7 mill, on the north side of the drift. Anderson and Fredrickson were in the process of charging some long holes. The No. 7 mill hung up and the scraperman prepared a bomb to blast in the mill about 12 feet above the top of the sets. The scraperman notified the men that he was going to blast in the next drift. They told him to go ahead and they stayed in their own drift. The concussion of the bomb in No. 7718 detonated the powder and prima cord in drift No. 7717, killing both men instantly.

Mr. METCALF. You may proceed to summarize this in an oral statement, if you wish.

Mr. RONN. In 1950, I think, the State labor committee was invited by the mining companies to make a tour of Michigan metallic mines. These companies made a tour of the 2 newest and most modern mines in the Upper Peninsula, 1 an iron mine and 1 a copper mine. This committee was not shown the actual condition of these new mines. They were taken on a tour of the mine levels, and rode all the way through. They were treated to a capacity dinner by the company, and they made a trip to the copper country and also inspected the newest copper mine.

A public hearing was held where a citizen's committee, a large committee, testified to the needs of mining safety in upper Michigan.

As this committee made their tour they were not accompanied by anyone but mining officials and supervisory people. And they did not see, from what they actually saw in the mines, any necessity for better safety rules. They were not shown the actual working areas in even these new mines, let alone the old mines that were still operating.

Every year since then we have attempted in the State of Michigan to have fair laws enacted for both the citizens and the workers in the mines. Our opposition has always been from the mining companies. But the mining companies have chosen, rather than open debate in front of a committee, to come in and demand special hearings days after our committee has left.

We have also received opposition from different firms that are in no way related to the mining industry of Michigan. They have written that they thought safety laws in the mines would be strictly patronage.

One company in particular manufactured doors, which is in no ways related to the iron industry.

We went year after year to the State legislature and presented news clippings like you have before you, actual photographs, mine-inspection reports, and year after year the bills have been killed in committee. They haven't let the State legislature vote and debate the issues. And we feel that we are entitled to some safety similar to the coal industry.

Now there are county mine inspectors, as you have heard this morning. This is entirely inadequate and old-fashioned and unjust. When the county mine inspector is supposed to be required to inspect all the mines in his county once a month, it is impossible for him to inspect, in Marquette County, 14 working mines plus an unknown number of abandoned pits. If the mine inspector does find an unsafe condition it is even more impossible for him to remain there and see that it is corrected.

Mr. Powell has stated that we will give you other reasons besides those of the people working in the mines. You have the people living in the mining areas. This 6-year-old boy in my hometown fell into an bandoned mine shaft. We have a one-horse town with 1 main street. But this boy was within 300 to 400 feet of his own home and within 50 feet of the main business street of Negaunee when he fell into this old shaft. This was an abandoned property right in the city area where there are invitations put there for little boys, when you put a fence around it. That invites the kids to go in there. It was just by luck that the diver was able to get this little boy's body out of the shaft.

Mr. Powell also stated that we lost two boys in the wintertime sliding down this old mine cave. And, once again, it was inadequately fenced.

We also have cases in and around the Negaunee-Ishpeming area where the mining companies have sold property to private individuals to build homes. We had a case not too long ago where a man built a new home and came out of the house one morning and found that there was a shaft approximately 250 feet deep that caved in in front of his home. This shaft was only covered with old plank, and the plank rotted away with time, and it was just by some lucky act that somebody did not get killed or that he had not built on top of this shaft.

Now, as to our county mine inspector, I stated where these other firms have stated it was patronage. You have heard the statement by Mr. Powell that we feel actually that our county mine inspector system is more patronage than anything else.

I was unable to obtain actual copies like Mr. Koponen, but I have here some figures from the Marquette County mine inspector reports for the period 1950 to 1955.

In 1950, we had 3 fatalities and 232 nonfatal accidents with 3,351 men employed. In 1951, we had again 3 fatalities, 261 nonfatal accidents, and 3,691 employees. In 1952, we had 4 fatalities, 256 nonfatal accidents, and 3,394 employees. In 1953, we had 2 fatalities, 215 nonfatals, and 3,939 employees. In 1954, we had fatalities, 166 nonfatals, and 3,575 employees.

And you will observe there is a notation here in my statement that the 1954 schedules of mine operations were reduced to a 32-hour week, which shows a decline in the number of accidents.

In 1955 we had 3 fatalities, 192 nonfatal accidents, and 3,131 employees.

So in Marquette County for the 6-year period we have had 17 deaths, 1,322 nonfatal accidents.

Mr. ELLIOTT. Let me interrupt you right there, Mr. Ronn, to find out what type of accidents primarily the nonfatal accidents are that you have described.

Mr. RONN. These nonfatal accidents result in a lot of broken limbs, arms, backs, legs. Or anything where you will experience a loss of time.

Mr. ELLIOTT. Are they occasioned primarily by rock falls or rock bursts or rock blasts?

Mr. RONN. In the iron mines we do not experience rock blasts like Mr. Cole stated. The majority of the mines in Marquette County

are a soft ore mine and are timbered mines. It requires men to work in places where they actually lay down to work, which results in a lot of these twisted or broken legs or backs. We have a lot of experience with severe cuts or bruises. I think those are about the majority of our nonfatal accidents.

Mr. POWELL. The accidents you mentioned there as being nonfatal accidents, are they minor accidents in which the employee keeps on working?

Mr. RONN. Yes.

Mr. POWELL. These are all compensable lost-time accidents?

Mr. RONN. Lost-time accidents. These 1,322 were lost-time accidents.

Mr. ELLIOTT. What is your waiting period in Michigan?

Mr. RONN. You mean on compensation cases?

Mr. ELLIOTT. Yes.

Mr. RONN. Eight days.

Mr. ELLIOTT. Eight days. So these nonfatal accidents that you describe here are actually compensable accidents?

Mr. RONN. Yes.

Mr. ELLIOTT. Accidents in which there was a waiting period of 8 days?

Mr. RONN. Yes.

Mr. ELLIOTT. These are taken from the records in the county, or the State records?

Mr. RONN. The county mine inspector.

Then we also have listed here, for the record, a description of the 17 death accidents.

Mr. METCALF. Does that complete your testimony, Mr. Ronn?

Mr. RONN. Yes; it does.

Mr. METCALF. I think Mr. Powell wanted to make a summary, and then we will ask you all to be available for some questions by the committee.

Mr. POWELL. Mr. Chairman and gentlemen, we are necessarily and naturally and properly very appreciative of these committeemen. We are very proud of them for the efforts they have been making toward bringing about a safety code to protect the lives and limbs of the people who work in the mines, people who live in the communities. And I can extend their concern slightly by saying this, that I am often told, so many times, as a union representative, by the mothers of these young fellows who go in to work in the mines that in many cases they feel just exactly the same as when they are drafted into the Army. They are going off into some danger that is unknown and terrible, and they feel very strongly, very badly, when their son has to go into the mines. It is just like he is going to war.

I should like to say that the union will avail itself of the invitation extended by the chairman to submit such information as we may find of value to you between now and December 1. Is that correct?

Mr. METCALF. The record on this particular matter will close on September 20. That is when we have asked that additional information be submitted.

However, I am informed that Mr. Burke, who is one of your safety representatives of your union, will testify extensively as to the activities in the Michigan copper country as well as other areas with which

he is familiar when the hearings begin in Washington, which are more specialized hearings.

We would appreciate it if you are able to submit the additional information and additional testimony for the record by September 20. If you find that you need to submit additional testimony after that date you can send it in to Mr. Burke, and it will be incorporated into his testimony.

Mr. POWELL. Thank you.

We have many times referred to the public law of 1911 covering mine inspection in Michigan. I have one copy here which I should like to submit to the committee for inclusion in the record as being a true copy of the Mine Safety Act in Michigan, with the exclusion of the preamble, which sets forth the qualifications of the mine inspector and his remuneration.

As I described it before, the mine inspector must be either a graduate mining engineer or an employee of 10 years' experience in underground mining, and he shall be paid not less than $15 a day for his services. From there on the law is just as I have it copied here.

Mr. METCALF. That is the existing law?

Mr. POWELL. The existing law which sets forth the powers and duties, and notably includes this one phrase which is the gimmick in the entire law:

He shall do all of these things and he shall "define the limits of the dangerous place and specify the work to be done or change to be made to render the same secure, ordinary mine risks excepted."

And the ordinary mine risk as an exception covers so many sins that the mine inspector can just say, "Well, that is an ordinary mine risk. It is dangerous, yes, but we are not required to do anything to correct it."

So, with those remarks and with the submission of this, I should like to say that we have been very gratified to have this opportunity, and we are appreciative of the courtesies and the consideration of your committee.

Thank you very much.

Mr. METCALF. Without objection, that copy of the Michigan law will be inserted at this point in the record.

(The material referred to follows:)

MINE SAFETY ACT IN MICHIGAN

17.318 Powers and duties; abandoned mine, fencing; expenses, audit, payment, assessment.

SEC. 8. The duties of the mine inspector shall be to visit all the working mines of his county once in every sixty (60) days, and oftener if in his judgment necessary, and closely inspect the mines so visited, and condemn all such places where he shall find that the employes are in danger from any cause, whether resulting from careless mining or defective machinery or appliances or improper or unsafe methods of any nature; he shall compel the erection of a partition between all shafts where hoisting or ore is performed and where there are ladderways, where men must ascend and descend going to and from their work. In case the mine inspector shall find that a place is dangerous from any cause as aforesaid, it shall be his duty immediately to order the men engaged in work at the said place to quit work, and he shall notify the superintendent, agent or person in charge to secure the place from the existing danger, which said notification or order shall be in writing and shall clearly define the limits of the dangerous place and specify the work to be done or change to be made to render the same secure, ordinary mine risks excepted. It shall also be the duty of the mine inspector to command the person, persons, or corpor-

ration working any mine, or the agent, superintendent, foreman or other person having immediate charge of the working of any mine, to furnish all shafts and open pits of such mine with some secure safeguard at the top of the shaft or open pit so as to guard against accident by persons falling therein or by material falling down the same, also a covering on all the carriages on which persons ascend or descend up and down the shaft, if in his judgment it shall be practicable and necessary for the purpose of safety: *Provided*, That when any mine is idle or abandoned it shall be the duty of the mine inspector to notify the person, persons or corporation owning the land on which any such mine is situated, or the agent of such owner or owners, to erect and maintain around all the shafts and open pits of such mine a fence or railing suitable to prevent persons or domestic animals from accidentally falling into said shafts or open pits. Said notice shall be in writing and shall be served upon such owner, owners or agent, personally or by leaving a copy at the residence of any such owner or agent, if they or any of them reside in the county where such mine is situated, and if such owner, owners or agents are none of them residents of the county such notice may be given by publishing the same in one or more newspapers printed and circulated in said county if there be one, and by registered letter, and if no newspaper be published in said county then in a newspaper published in some adjoining county for a period of three (3) consecutive weeks. If such owner, owners or agent shall not, within thirty (30) days after receiving such notice or within thirty (30) days after the completion of such publication, erect such suitable fences or railings as above provided, it shall be the duty of the mine inspector to cause such suitable fences or railings to be erected and to make a return of his doings in the case, with the description of the land or lands on which such shafts and open pits are located, together with an itemized statement of the actual expenses incurred in such case on each description of land, to the county clerk of the county, which return and statement shall be verified by the affidavit of the mine inspector. All expenses incurred under the provisions of this section shall be audited by the board of supervisors of the county, and all sums allowed by such board for such expenses shall be paid from the general fund of the county. The county clerk shall certify to the board of supervisors at its annual meeting in each year the amount of expense incurred under the provisions of this section during the preceding year and the amount belonging to each and every description of land on which any such mines are situated, and said amount shall be certified to the supervisors of the proper townships in the same manner as county taxes are certified to said supervisors, and the amount of the expense incurred as above on each description shall be assessed by said supervisors upon the said description upon their assessment rolls for that year in a separate column, and shall be collected in the same manner as county taxes, and when so collected paid into the general fund of the county. (C. L. '48, 425.108; C. L. '29, 8529; C. L. '15, 5509.)

Mr. METCALF. We were in hearing the other day and we had testimony from Mr. Wilson—and I see he is with us again today—that it was safe to work in a Minnesota mine, at least the types of mines that we were visiting at that time—the open-pit mines and such underground mines as the Albany mine that we visited—than it was to work in a Minnesota hotel or in an industry producing dairy products.

Is that statement true insofar as Michigan is concerned?

Mr. POWELL. I should certainly say it is not true of Michigan mines. I do not know, however, the statistics as to hotel fatalities or hotel injuries. Nor am I too familiar with the dairy business except that I do often read that the domestic bull is the most dangerous animal on earth. So there might be quite a number of hazards in that occupation, too.

Mr. METCALF. Mr. Powell, could we not arrive at proper safety regulations and safety conditions in the Michigan mines without legislation but by negotiation between the union and the employer?

Mr. POWELL. We have not been successful as a union, a responsible union recognizing the need for it, in negotiating safe conditions up to this date. All we have been able to negotiate is the right to inspect

the conditions without the right to make any effective recommendations for their change.

Mr. METCALF. In the contract you have just completed do you have a provision for mine safety in that contract?

Mr. POWELL. Yes, sir, we have a section which provides, in substance, that if an employee believes his working place to be unsafe he may, after pointing out the suspected unsafe condition to his foreman, then leave the working place without penalty.

Mr. METCALF. Would you have a copy of that provision in your contract and supply it for the committee?

Mr. POWELL. I can read it into the record.

Mr. METCALF. We will have it incorporated in the record at this point, and you will supply it right after the hearing.

(The contract provision, art. XIII, referred to is as follows:)

ARTICLE XIII. SAFETY AND HEALTH

SECTION 1. The Company shall continue to make reasonable provisions for the safety and the health of its employees at the mine. Protective devices and wearing apparel and other equipment necessary to properly protect the employees from injury shall be provided by the Company in accordance with the practice now prevailing at each mine or as may be improved upon from time to time. Within thirty days from the execution of this contract the Company shall furnish the local Union at such mine with a list of the protective devices, wearing apparel, and other equipment furnished by the Company hereunder and a statement of the conditions under which furnished. Goggles, gas masks, face shields, special-purpose gloves, fireproof or acidproof protective clothing, hard hats and liners, electric cap lamps and belts, dust respirators, safety belts, welders' helmets, and masks shall be provided to employees without cost, except that the Company may charge an employee a reasonable amount for any loss or willful destruction of any of the foregoing by such employee.

SEC. 2. The Union may designate employees with at least one year's experience at the mine, not less than three or more than five in number, to form, with a similar number of representatives designated by the management, the safety committee at the mine. The members named by the Union may be designated as representing a particular department and may accompany the safety inspector of the Company on an inspection of the department at least once each month, and may accompany any County or State mine inspector on any such inspections conducted by him if required by law or agreeable to such inspector. Following such inspection trip there shall be a meeting of the safety committee at which recommendations with respect to safety conditions may be made, and at which time the action taken upon recommendations previously made shall be discussed. At the request of the safety committee one member thereof may accompany management on its investigation of any serious accident, or potentially serious accident.

SEC. 3. If an employee shall believe that there exists an unsafe condition, changed from the normal hazards inherent in the operation, so that the employee is in danger of injury, he shall notify his foreman of such danger and of the facts relating thereto. Thereafter, unless there shall be a dispute as to the existence of such unsafe condition, he shall have the right, subject to reasonable steps for protecting other employees and the equipment from injury, to be relieved from duty on the job in respect of which he has complained and to return to such job when such unsafe condition shall be remedied. The management may in its discretion assign such employee to other available work at the mine. If the existence of such alleged unsafe condition shall be disputed, the Chairman of the Grievance Committee of the Union at the mine or his designee and the management's representative or his designee shall immediately investigate such alleged unsafe condition and determine whether it exists. If they shall not agree and if the chairman of the Grievance Committee or his designee is of the opinion that such alleged unsafe condition exists, the employee shall have the right to present a grievance in writing to the management's representative or his designee and thereafter to be relieved from duty on the job as stated above. Such grievance shall be presented without delay directly to an impartial

umpire under the provisions of Article X of this Agreement, who shall determine whether such employee was justified in leaving the job because of the existence of such an unsafe condition.

Mr. METCALF. As I understand it, the mine safety inspector is a county employee. Is there a State mine safety inspector in Michigan?

Mr. POWELL. There are none except covering coal mines which have more or less been abandoned also, but none are effective for the metallic mines.

Mr. METCALF. One of the qualifications is that a man must have had experience as an underground miner for 10 years?

Mr. POWELL. That is what it says.

Mr. METCALF. But if a member of the union who had such experience ran for and was elected mine safety inspector, did you say that the companies will take away his pension and his other rights as an employee?

Mr. POWELL. They do, sir, in the majority of companies.

The Cleveland Cliffs Iron Co. and the North Range Mining Co., Inland Steel Mining Co., Jones & Laughlin, each of them provide that an employee may be terminated if he fails to return to work upon notice to return to work.

The present mine inspector in Marquette County is a young man by the name of Henry Skarf. In 1954 he was on layoff, economic layoff. He ran for the office of mine inspector and was elected. In the early spring of 1955 he was notified by the company to return to work for full-time employment. He was unable to return to work without resigning as mine inspector. So he remained as mine inspector, and the company sent him a notice terminating his employment. He then and thereby lost all of his rights to reemployment; he lost his rights to vacation—well, you have no vacation rights without employment rights, but he lost his pension rights.

Mr. METCALF. His seniority rights?

Mr. POWELL. And his seniority rights, and his right to recall and reemployment.

Mr. METCALF. So, for all practical purposes, an experienced miner who wanted to continue to work in the mines at the conclusion of his service as mine inspector could not run for mine inspector and would not run?

Mr. POWELL. He would not run. He would not dare to run, Mr. Chairman, because if he were a good, effective, militant and aggressive mine inspector who believed in enforcing such little authority as he might have, would find that upon his failure of reelection that he would return to the mining company which had formerly employed him, and they would say "I'm sorry, but we have no job for you just now."

Mr. METCALF. So the only inspection of mines in Michigan is by the county mine inspector?

Mr. POWELL. That is correct.

Mr. METCALF. And whatever inspections may be made by the insurance companies or the companies writing the workmen's compensation policies?

Mr. POWELL. You are correct, Mr. Chairman, except that no one has ever inspected the mines except the county mine inspector. And occasionally, as Mr. Johnson testified, on invitation, the Bureau of Mines.

Mr. METCALF. Do you know how the mining companies carry their compensation in Michigan? Are they self-insured?

Mr. POWELL. Almost entirely so; self-insured.

Mr. METCALF. Now I know that some of the members of your organization have examined this bill. Mr. McDonald, who is the legislative representative, has talked to various members of the committee about the legislation that is before the committee. It is a group of bills, all of which are identical.

You realize, of course, that in the legislation that we are considering there is no power granted to the Federal Government to close down a mine.

Mr. POWELL. I am not too familiar with that. I did not know that, Mr. Metcalf.

Mr. METCALF. Nor is there any power in the Federal Government to do other than largely collect information and to disseminate such information to other mine operators and unions and people interested in safety.

The legislation with which we are concerned would give, however, a right of entry to any Federal mine inspector to make an annual mine inspection, a right of entry that is not now existent, and, at the same time, would give a right of entry to the inspector to make an inspection after an emergency or after an accident had occurred.

It also would require the filing of these reports that are now voluntarily filed by some companies and not filed at all by others.

It is our concept that if we could get some inspection in the mines where the inspection has been lax and get proper publicity on the existence of unsafe conditions, we would not need to get the power of the Federal Government in there to enforce or close down the mines, or to go into the Federal court and get a writ to close down the mines, or use any other methods other than publicity and education and various nonforcible ways of getting compliance with a Federal safety law.

Nor is this legislation contemplating a uniform code.

Perhaps it would delegate to the head of the Bureau of Mines an obligation to plan a code for the guidance of his inspector. But we feel that nationally the conditions are so different that we could not get a uniform code.

So we are directing our attention in this legislation to an attempt to get reports, an attempt to get people into the mines where they are not permitted to make inspections, and point out conditions that are unsafe, and to give information about such conditions and about the proper safety operation, to all the people who are concerned. And we feel at least that will be a long step in advance. And I believe it would be a long step, do you not, in Michigan?

Mr. POWELL. It appears to me, Mr. Chairman, that a law such as that, if enacted, would bring about such a terrific impact publicity-wise that it might provide the inspectors who inspect regularly with the muscles necessary to bring about some enforcement of safety.

We still believe the code is necessary.

We cannot visualize 7 or 8 different mine inspectors, each of them with a different idea as to what constitutes good safety practice.

But that may be something for us to continue our crusade for. However, this one is certainly the greatest step forward yet made. This has been the most constructive hearing that we have been privileged to testify in.

We are hopeful that something can come out of this that will be helpful to the employees that are represented by the United Steelworkers of America.

Mr. METCALF. Mr. Elliott?

Mr. ELLIOTT. Mr. Powell, do you know or could you furnish the committee the number of metallic mines operating in Michigan at the present time? Somebody has testified here that there are three counties in which copper is being mined in Michigan.

Mr. POWELL. There are three counties in which copper is being mined. There is Keweenaw County in the extreme tip of the Upper Peninsula of Michigan, there is Houghton County, and Ontonagon County. These are the counties adjoining Lake Superior way up in the northern part.

Mr. ELLIOTT. Are those the copper counties?

Mr. POWELL. Those are the copper counties.

The counties in which iron is produced are Gogebic County, Iron County, Dickinson County, Marquette County, and Baraga County. Those are the 5 or 6 counties in which iron is presently being produced.

There are many companies involved in the extraction of both copper and iron.

Mr. ELLIOTT. Are those the only two metals mined in Michigan?

Mr. POWELL. Those are the only two metals presently being mined. The Calumet & Hecla Co., Inc., is the largest employer of people in the copper area. They mine and produce copper in both Houghton and Keweenaw Counties.

The Quincy Mining Co. produces copper from the old abandoned stamp sands. These are the sands that were washed away many years ago that are now being reclaimed.

The Copper Range Mining Co. has a large development in Ontonagon County which is just coming into production you might say.

We have presented no testimony relative to injury incidence in that company or in that operation.

Those are the principal copper people. There are a few other little fringe people who still have holdings there but are not largely active.

In Gogebic County the Oliver Mining Co. has large holdings that they are presently engaged in mining. The Republic Steel Co. has holdings which they are not operating as a company at this time. Pickands Mather operates very extensively in Gogebic County. The M. A. Hanna Co., I believe, has some holdings there, and they are perhaps actively operating them. The North Range Mining Co. is also engaged in mining in Gogebic County. And, parenthetically, the Gogebic County is known as the Gogebic Range.

In Iron County, which is known as the Menominee Range, the principal operator is the M. A. Hanna Co., Also operating there are the Inland Steel Co., the Pickands Mather Co. and the Cleveland Cliffs Iron Co. has holdings there which are presently not being worked.

There are some siliceous mines in Dickinson County which were being operated by a company that I cannot name at the moment. They are open-pit mines with a small number of employees, not exceeding perhaps some 50 people.

Marquette is the largest county in terms of production and in terms of employment of people in the iron mines. The principal operator

there is the Cleveland Cliffs Iron Co., who employ some 2,700 or 2,800 people at this time. Next is the Jones & Laughlin Steel Corp. with a very large mine coming into production there. Inland Steel Co. is operating two mines. And other holdings are now inactive in Marquette County. Other holdings are Jones & Laughlin, Youngstown, and other steel corporations and the Oliver Iron Mining Co.

Baraga County presently has one active mine, which is an open-pit operation that employs some 65 people.

Mr. Elliott, does that help you in establishing the record of just who is active and where?

Mr. ELLIOTT. I think the information is very helpful.

Now what about the rate in the underground mines as compared to the open-pit mines? The accident rate, that is.

Mr. POWELL. It is very much greater.

Mr. ELLIOTT. Very much greater where?

Mr. POWELL. In the underground mines.

Those underground mines have a very high accident ratio as compared to the open-pit mines. And the severity of the accidents is much greater.

Mr. ELLIOTT. I gather that a great deal more of the metallic mining in Michigan is done by the underground process than is done by the open pit?

Mr. POWELL. Perhaps 99 percent of it is underground.

Mr. ELLIOTT. I believe that is all the information I wanted to get, Mr. Chairman.

I want to join you in thanking Mr. Powell for the fine testimony he has brought us, and the very complete information he has given about Michigan.

Mr. METCALF. Mr. Blatnik, do you wish to ask any questions of these witnesses?

Mr. BLATNIK. I have refrained from asking questions. In spite of the kindness and consideration and generosity of the good chairman in allowing me to sit as a part of the committee, I am not a member of the committee.

I am very pleased and feel fortunate to have these busy men on this important subcommittee getting into a field that has not had too much attention for too long a time. We appreciate the committee coming up here and giving our people an opportunity to testify.

I am not personally acquainted with the mining operations in the copper and iron mines in northern Michigan, but I certainly am quite familiar with the operations in northern Minnesota. I do know most of these men, particularly Mr. Powell and 2 or 3 of his witnesses here who have done an excellent job, and I do know them to be men of integrity and men of reliability and men of good faith. I do not believe they come here to carp or to criticize against management on any personal basis, but I do feel that they have a basis in presenting their problems and their complaints here for a more detailed investigation.

I do think that something of a positive cooperative character can be developed here that we are so proud of up in the iron area of the Mesabi Range in the way management and labor are working jointly with the county safety inspectors who have accompanied us during these past 3 days, and the cooperative, positive, coordinated manner in which improvements can be made to rectify some of the unfavorable situations that have been presented here this morning.

It has been a pleasure to listen to your testimony.

Mr. METCALF. Thank you, Mr. Blatnik.

I want to join with my colleagues in complimenting you, Mr. Powell and the rest of your witnesses, on a fine presentation, one that has been helpful, one that has made us aware of the problem in your area, a problem that I assure you this committee will give its closest attention to.

I regret very much that my three colleagues were unable to be here. They would have been as interested and as concerned about this testimony that you have presented today as we are. However, I assure you that they will carefully read your testimony in the record, as will other Members of Congress, and that you have made a distinct contribution to the activity and work of this subcommittee.

We appreciate your efforts and the efforts of the men with whom you have appeared.

Thanks you, Mr. Powell.

Mr. PARDEE. Representative Metcalf, may I say a word?

Mr. METCALF. Surely, Mr. Pardee. This is very informal.

STATEMENT OF FRANK G. PARDEE, PRESIDENT, THE LAKE SUPERIOR IRON ORE ASSOCIATION, CLEVELAND, OHIO

Mr. PARDEE. May I ask for permission to put in some testimony?

We understood that the testimony this morning was to be entirely on copper; that is, the iron ore companies whom I represent so understood. So no one was here. We would like permission to submit some information by written brief.

Mr. METCALF. Unless there is objection, Mr. Pardee, you will have permission to submit any information that you feel would be helpful, if it is not too voluminous.

Mr. PARDEE. I think we have a great deal of information that would be of value to you.

Mr. METCALF. We will be glad to have it. And I know that the men who testified will be glad to have it.

If you wish, you may testify here this morning.

Mr. PARDEE. I am not qualified because I am not a safety engineer, to testify in this particular instance.

Mr. ELLIOTT. You understood about the time?

Mr. PARDEE. Yes; I understand about Sepetmber 20.

Mr. METCALF. That is merely for the benefit of the people who are compiling and printing the record. If something occurs that either of you, either this group or yours, Mr. Powell, or the people you are representing, Mr. Pardee, are unable to get it in at exactly that time, if you will let the committee know we will hold the record open.

Mr. PARDEE. We will try to have it.

Mr. METCALF. We are after two things. First, we are after information from every source that we can obtain it from; and, second, we are anxious to build as complete and as accurate a record as possible. Both of those will be helpful.

Mr. PARDEE. Thank you.

Mr. METCALF. Does anyone else want to keep the record open here?

Mr. HOLTZINGER. I just want to make a statement.

Mr. METCALF. We are glad to have you. I wish you would come forward so the reporter can get your statement.

STATEMENT OF W. T. HOLTZINGER, STATE INDUSTRIAL COMMISSIONER OF THE STATE OF MINNESOTA, MINNEAPOLIS, MINN.

Mr. HOLTZINGER. My name is William T. Holtzinger.

Mr. METCALF. You are the State industrial commissioner?

Mr. HOLTZINGER. State industrial commissioner of Minnesota.

Mr. METCALF. Where is your home, Mr. Holtzinger?

Mr. HOLTZINGER. Minneapolis, Minn.

The industrial commission hasn't anything to offer the committee this morning, but we would like to note our appearance here.

We have received notice of this meeting from your committee, and we would like to say to the committee that the State of Minnesota and the industrial commission is ready to cooperate and assist this committee in order to make this a successful meeting up here in Duluth.

Now, in the State of Minnesota the division of accident prevention, of course, does not have any jurisdiction underground. We do have laws, though, covering the workers in the mines above ground.

I heard one of the previous speakers here, these gentlemen from Michigan, say something in regard to explosions. We have a law covering explosives and the storage of explosives in the State of Minnesota. And if that would be of any help to those people or to the committee, I have a book here on that, and I would be glad to issue it.

But let me say again we are ready to cooperate with your committee.

Mr. METCALF. I want to say, Mr. Holtzinger, that we have had fine cooperation from you and the people of Minnesota, from everyone with whom we have corresponded. We welcome the assurance of your cooperation, but we certainly did not need it, because we have already had it.

If you will leave the booklet with the committee it will be at least kept in the file. We appreciate your appearance here.

I also want the record to show that Mr. Francis La Brosse, who is a State representative in the Minnesota State Legislature, is here in attendance at this hearing. He does not want to testify, but he has been here.

Are there any other witnesses who wish to appear?

Mr. ELLIOTT. Mr. Chairman, before the hearings are adjourned, I would like to say in behalf of myself—and I am sure I speak for my colleage from Montana, Mr. Metcalf—that I feel we should express the thanks of the subcommittee to Congressman John Blatnik for the very fine cooperation he has given the subcommittee since we have been here.

I am completing my fourth term in the Congress of the United States, and in that capacity I have participated in lots of hearings from time to time at various places over the United States and in some areas outside of the United States, and I have never seen a more complete cooperation rendered by any Member of Congress in any place that I have been than has been shown the committee by Congressman Blatnik. His cooperation in showing the committee the wonderful resources of the State of Minnesota, and particularly in the field of iron ore, has been outstanding. His interest, I am sure, is in accord with the burden of his congressional service which has been along the line of building up and conserving the God-given resources of this great State. His leadership in the field of the

development of the taconite industry has been superb, in the development of the St. Lawrence seaway, in the development of the national highway law that was passed in the recent session of Congress, his authorship of the stream pollution bill passed by the recent Congress—all of these bespeak his interest in the natural resources of his State, and of our country, and are in line with the wonderful cooperation he has shown the committee since we have been here.

I thought we ought to express our thanks to Congressman Blatnik, Mr. Chairman.

Mr. METCALF. I thank my colleague.

I want to add that this is a subcommittee of the Committee on Education and Labor. And Mr. Blatnik's interest in the most important natural resource—the boys and girls of America—has also been demonstrated in testimony before this committee. Had you been with us up in his own home country on the iron range you would have seen him point out to us every schoolbuilding in that whole area, telling about the distinguished graduates from each one of those schools.

I also want to add the grateful thanks of the committee to all of the people who have cooperated with Congressman Blatnik in making this a very successful and important series of hearings. I speak of the employers at the mines we visited, the members of the union and union representatives who have participated in the hearings, who helped organize and establish a fine time schedule for us, and who have been of great benefit in helping us make these hearings possible.

Mr. BLATNIK. Mr. Chairman, thank you ever so much for your kind words. The success was due, if there is any credit for the success of your trip, to the splendid cooperation received on the iron range and Duluth from management and from the unions and from the civic groups and public officials. They have been perfectly grand all the way through.

Mr. METCALF. Unless there is anything else that anyone wants to bring before the committee, we will stand in recess subject to the call of the Chair.

(Whereupon, at 12:10 p. m., the committee was recessed subject to the call of the Chair.)

MINE SAFETY (METALLIC AND NONMETALLIC MINES)

TUESDAY, SEPTEMBER 18, 1956

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON MINE SAFETY OF THE
COMMITTEE ON EDUCATION AND LABOR,
Butte, Mont.

The subcommittee of the Committee on Education and Labor of the House of Representatives of the United States met on Tuesday, September 18, 1956, pursuant to resolution adopted by the 84th Congress, at 1:30 p. m., mountain standard time, in the courtroom of the Federal Building, at Butte, Mont., Hon. Lee Metcalf, chairman, presiding.

Present: Representatives Elliott and Fjare.

Also present: Russell C. Derrickson, chief investigator; and John O. Graham, minority clerk.

Mr. METCALF. This hearing will be in order.

This is a subcommittee of the House Committee of Education and Labor. Congressman Elliott on my right and Congressman Fjare on my left are members of the Subcommittee for Study of Mine Safety.

This committee has before it a group of bills that were introduced during the various two sessions of the 84th Congress.

The primary sponsors of this legislation were the two ranking members of the House Committee on Education and Labor: Mr. McConnell, the ranking minority member and a former chairman of the committee; and Mr. Kelly, the second ranking member on the majority side. In addition to those, we have other cosponsors, including the chairman of the subcommittee.

However, the legislation will have to be introduced or reintroduced at the next session of Congress, so the purpose of this committee is to inspect various mining installations throughout the United States to study the need for such legislation as was presented to the 84th Congress to determine whether such legislation is under Federal control or there is a need for Federal control and regulation, and, if any, what changes should be made.

The purpose of the hearing today is largely to hear from local miners and local mine operators, who will not have an opportunity to testify before this committee later when further and more detailed hearings are held in Washington later on this year.

At the conclusion of the hearings this committee will write a report and make recommendations to the 85th Congress to the members of the Committee on Education and Labor of that Congress as to the type of legislation that, as the result of our studies, we feel should be in-

troduced, or, if we come to the conclusion that there is no Federal need for such legislation, such a recommendation will be made.

These hearings will go on today until a fairly reasonable hour, 5 or 5:30, if necessary, they will run along tomorrow. The subcommittee has to leave for hearings in Colorado, so tomorrow will be the last day of the hearings. I have had a considerable list of witnesses submitted to me by members of the Mine, Mill, and Smelterworkers Union; I've had a list of four witnesses submitted by local 601 of the Steelworkers Union, and I have arranged with Mr. W. G. Maloney, who is representing some of the independent miners of the Montana Miners Association that he can start his witnesses on at 10 o'clock in the morning and will have 2 hours; so, just in order to tell you how we will run along, we will run along with the witnesses submitted by the International Union of Mine, Mill, and Smelterworkers today; tomorrow we will meet at 9 o'clock, instead of 10 o'clock, and we will have the other witnesses of the Mine, Mill, and Smelterworkers, especially the bed cases that were mentioned, so that they will be here at 9 o'clock. And then you will have from 9 until 10 to put those witnesses on, and then I will recognize Mr. W. G. Maloney of the Montana Miners Association for his witnesses; and then we will clean up whatever is left on Wednesday afternoon. If that is clear and—other matters will come out during the course of the testimony.

The first witness will be Mr. Ernest Salvas; but before I call you, Ernie, I promised that I would call a recess as soon as Congressman Elliott was available. Under the rules of the House, as promulgated by Speaker Rayburn, no radio broadcasting, televisioning or photographs are permitted to be taken during sessions of Congress or in the course of legislative hearings, so, in order to get the pictures out of the way and to accommodate the photographers, I will declare a recess of not more than 10 minutes at which we will have some pictures taken and if you want some of the pictures of your witnesses that are going to testify, well, you have them taken at this time.

We will be in recess for 10 minutes.

(After recess.)

Mr. METCALF. The committee will be back in order.

I want to announce that, unless there is an objection, the record will be kept open for statements until after election. We intend to hold hearings in November in Washington and then the record will be printed after those hearings are concluded so that if any group or individual here represented wants to file an additional statement or wants to file a statement with the hearings, they will make arrangements with Mr. Derrickson who is right here and he will receive their statement, or, if after the hearings are concluded and the subcommittee has left, you will write to the Committee on Education and Labor, House of Representatives, in Washington, Washington 25, D. C., you can file additional statements for the hearings. Without objection that will be ordered.

Now we will hear Mr. Salvas, and, as I understand it, you have a prepared statement?

STATEMENT OF ERNEST SALVAS, EXECUTIVE BOARD MEMBER FOR DISTRICT 1, INTERNATIONAL UNION OF MINE, MILL, AND SMELTER WORKERS, MONTANA

Mr. SALVAS. Yes.

Mr. METCALF. Ernie, did you give the reporters a copy of your statement?

Mr. SALVAS. I furnished the reporters and the staff and the committee with copies.

Mr. METCALF. Well, then, Mr. Salvas, you will identify yourself and proced in any way you see fit.

Mr. SALVAS. Mr. Chairman and members of the committee, my name is Ernest Salvas. I am the executive board member for district 1 of the International Union of Mine, Mill, and Smelter Workers which represents nearly 10,000 workers engaged in mining, milling, smelting, and refining of nonferrous metals in the State of Montana.

Most of my own working life has been spent in this industry. I have been district board member for the past 3 years. Prior to that I served as an international representative of our union in this area for 4 years. For 16 years before that I worked in underground mines, mills, and smelters in several copper, gold, and phosphate properties in the State of Montana.

On behalf of our members in Montana, and also on behalf of our international union—which represents the vast majority of nonferrous metal workers in the United States—I want to extend our most cordial welcome to the members of this committee. We deeply appreciate the interest shown in the personal welfare of workers in this industry by your presence here today.

The series of hearings on which your committee has embarked offers the first opportunity for a discussion, before a congressional committee, of the very serious problem of silicosis in nearly 20 years. It was just that long ago when another House Labor Subcommittee focused nationwide attention on the frightful toll of human lives taken by silicosis during the building of a tunnel in Gauley, W. Va. Those hearings created a broad public interest in the subject that ultimately did bring correction of some of the worst conditions in this and other industries.

Similarly, so far as we have been able to determine, these hearings are the first public examination by any Federal agency into the health conditions of miners in this area since 1921, when the Bureau of Mines conducted a health survey. We also believe it is the very first time a congressional committee has publicly concerned itself with the safety problem in noncoal mines.

That brief history emphasizes the unusual significance which our members and our union attach to these proceedings. We hope and trust that from this series of hearings there will also result some constructive improvement in the working conditions and lives of our members.

My purpose here today is to present a broad and fairly general picture of some of the major health and safety problems faced by our members in Montana. Other witnesses—local union representatives and workers from the mines and smelters—will fill in that general outline in more specific detail. They will testify, by their presence

here and in their own words, as to their personal experiences and observations on conditions in this industry in Montana.

At best, all of these other witnesses will be able to present only a very small sampling of the total safety picture in this State. The personal stories you will hear make up a tiny fraction of the total of human suffering endured by the injured and the disabled in this industry over recent years. Neither time nor circumstances would permit us to bring before this committee the 554 permanently injured in Montana metal mining in the past 4 years alone, nor to relate the individual stories of the many thousands who suffered varying degrees and kinds of accidental injuries and occupational diseases.

This general introductory statement, I hope, will at least furnish a general background against which the individual stories can be assessed—just as the individual stories will make more meaningful, in human terms, some of the necessarily cold and bare statistics and generalizations.

Essentially, we are here concerned with human lives. All of us here, I am sure, share the common purpose of seeking to prolong and to save lives of present and future generations of men who work in this industry.

Our industry—the nonferrous metals industry—is unusually hazardous. It is especially so in underground mining, but, as later testimony will show, there are also many unusual hazards for workers engaged in the smelting and refining of ores.

Workers in underground mining are exposed to all the common hazards endured by workers in manufacturing plants plus a large number of uncommon hazards peculiar to mining—dusts, gases, sudden and extreme changes in temperatures, and the possibility of suffering injury from falling ground, haulage equipment, falls, explosives, and numerous others.

Workers in smelters and refineries also face many unusual health hazards in the form of dusts, poisonous fumes, mists, and gases.

Today, I want to speak mainly of dusts, accidents, and some of the other more serious forms of occupational diseases peculiar to this industry.

DUSTS

Mr. Daniel Harrington, former Chief of the Health and Safety Division of the United States Bureau of Mines, in a paper that appeared in the April 1950 issue of the quarterly of the Colorado School of Mines (vol. 45, No. 2B, p. 221), stated:

> While definite statistics are not and probably never will be available, it is almost a certainty that far more underground workers are incapacitated or die annually from the breathing of excessive amounts of dust than are killed by mine explosions or fires.

Unfortunately, the many thousands who are incapacitated and are ultimately killed by dust diseases never make the headlines—which is probably one reason why public opinion has not brought about more effective control and reduction of dust hazards.

The most common dust disease is silicosis, caused by the inhalation of excessive amounts of silica dust. Medical authorities have shown that the silicotic lung is more susceptible to bacterial action than is the average lung. That is why hardrock miners, as a group, suffer a

much greater degree of influenza, pneumonia, bronchitis, tuberculosis, and other forms of respiratory diseases. Silicosis also requires the heart to work much harder in order to push blood through the obstructed lungs and, therefore, frequently leads to disease of the heart and circulatory system.

An excellent review of the literature on medical and other aspects of silicosis is contained in the Bureau of Mines publication Review of Literature on Dusts, Bulletin 478, which I strongly recommend to the members of this committee, if they have not already read it.

Silicosis is also one of the few industrial diseases for which there is no known cure. The disease advances even after the worker has been removed from exposure to dust, although removal from a dusty atmosphere, in the early stages of the disease, usually slows up the progress of the disease. The more silica dust there is in the air, and the longer the worker is exposed to it the worse are the effects.

Until recently, with little real foundation for the belief, it was generally assumed, even among public-health people, that silicosis was no longer a serious problem. More recently in a paper by several officials of the United States Public Health Service, Accomplishments in the Epidemiologic Study of Silicosis in the United States, that appeared in the July 1955 issue of the A. M. A. Archives of Industrial Health, the statement is made that—

> * * * from the foregoing statistics, crude as they may be, it is apparent that silicosis is yet a major occupational disease in the United States.

Our experience in Montana amply confirms that conclusion.

We have had in Montana, since July 1941, a law under which fully disabled silicotics who are unable to engage in any manual labor, receive public-welfare benefits. These benefits, after several successive increases, now amount to $65 a month. From records of the Montana Department of Public Welfare, we have prepared a chart showing the number of persons receiving such benefits as of June 30 in each of the years since the act has been in operation. That chart is attached to the back of this statement. I submit it to the representatives and members of the committee.

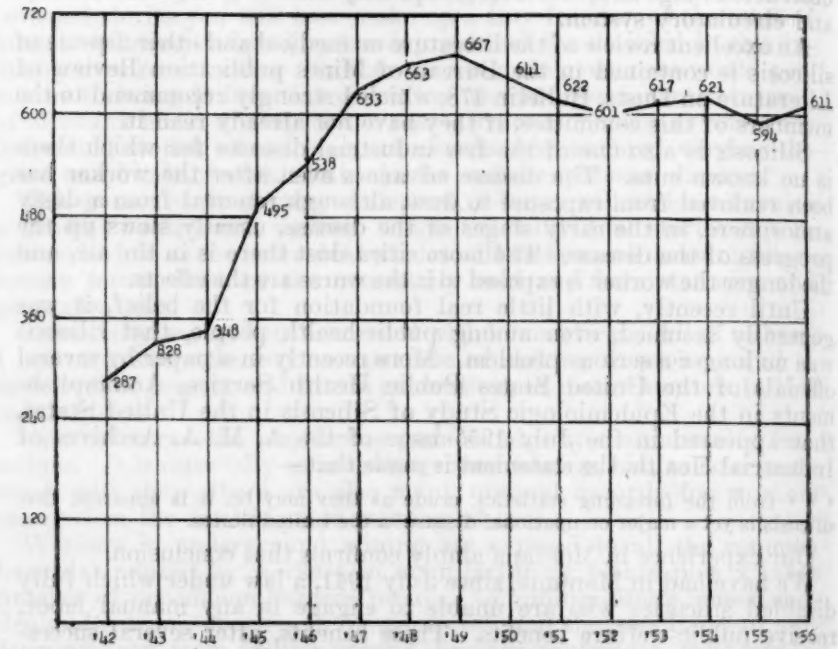
Mr. METCALF. If that chart will reproduce and if we can have it printed and reproduce it satisfactorily, unless there is objection, it will be inserted in the record at this point. I just checked with the clerk and he is not sure that it can be reproduced, but we will do our best.

Mr. SALVAS. Well, I wanted to call the committee's attention to its attachment to the back of the statement and the heading on it, "Number Receiving Silicosis Benefits in Montana on June 30 of Each Year."

Mr. METCALF. Unless there is objection, this chart and the subsequent charts will be admitted at the points that you indicate.

(The chart referred to is as follows:)

NUMBER RECEIVING SILICOSIS BENEFITS IN MONTANA
ON JUNE 30 OF EACH YEAR



NOTE: Act providing for Silicosis benefits became effective July 1, 1941. In first year, 360 persons received benefits, of whom 73 had died by June 30, 1942.

Source: Data from Montana Department of Public Welfare.

Mr. SALVAS. The figures (see chart above), it should be noted, are not exact averages, but furnish a fairly reliable indication of the trend of silicotic benefit payments. From June 30, 1947, until the past June 30, the number of recipients has only once fallen below 600. The average number during this period—so far as we can estimate it—has varied between 600 and 625, despite an annual turnover (according to the Department of Public Welfare) of from 90 to 100 cases, that is, the number added to the rolls and the number removed from the rolls. Is that clear?

Mr. METCALF. Are you going to show how many of these 600 have a mining history, or do you know that?

Mr. SALVAS. No. We haven't been able to gather that kind of information, but by the time of your Washington hearings, we may have more technical details to supplement the record with.

That, we submit—in a State in which the average metal mining employment for this period has varied between seven and eight and a half thousand—is, by any standard, a lot of silicosis.

The number of recipients of benefits is by no means the total picture on the amount of silicosis that exists in Montana. The eligibility requirements for receiving benefits, which is entirely apart from compensation, is 10 years' residence and total disability. There are many silicotics who cannot meet the 10 years' residence requirement.

Also, as numerous studies have shown—for every totally disabled or third-stage silicotic, there are many more with partial disability who will eventually become totally disabled. The number of partially disabled—so-called first- and second-stage silicotics—according to various studies, has varied from 3 to 10 times the number of third-stage cases. Further, it is obvious that when faced with a meager allowance of only $65 a month, many silicotics will—at the risk of further shortening their already limited life expectancy—continue efforts at making some kind of living.

How does this compare with conditions in other States?

Unfortunately, there are no complete figures that enable us to make precise comparisons. Based upon such data as we have been able to secure—in reports of State compensation agencies and various medical journals—our conclusion is that, in relation to the size of the work force, Montana has one of the worst records in silicosis. We hope by the time of the Washington hearings of this committee to have more complete comparative State figures to present.

A further indication of the wide prevalence of silicosis in Montana can be found in available figures on tuberculosis morbidity and mortality. Medical authorities have long recognized a relationship between silicosis and tuberculosis. Until very recently, many experts estimated that from 60 to 75 percent of all silicotics will eventually contract tuberculosis. Today, while precise figures are unavailable, it is generally recognized that this proportion is smaller.

Despite the great progress made in reducing the incidence of tuberculosis—and this applies to Montana as well as to other States—we find that in any year there is invariably a far greater amount of TB among the white male population of the mining counties of this State than for the same group in any other of the counties. The only counties in which there is more tuberculosis—for the entire population—than in the mining areas are those containing large Indian populations. The reasons for the higher incidence of tuberculosis among Indians is obviously not related to industrial causes, as is the case in mining counties. We hope also to have more detailed data on this available for the Washington hearings.

The only known way of preventing silicosis is to remove the dust that causes it. We know that dust-control measures have been undertaken by all mining companies. The continued development of silicosis despite these measures shows—we submit—that much more has to be done. Our members tell us—and many of them will tell you—that many operations today still have very serious dust hazards.

The only known way of preventing silicosis is to remove the dust that causes it. We know that dust-control measures have been undertaken by all mining companies. The continued development of silicosis despite these measures shows—we submit—that much more has to be done. Our members tell us—and many of them will tell you—that many operations today still have very serious dust hazards.

Greatly increased productivity in recent years and the resultant increased mechanization of many operations (including greater use of machines, faster drilling, faster movement of ores, etc.) produces more dust and a lag in dust-control methods.

We have contended for many years that Federal inspection of the metal mines—such as is proposed in the specific bills before this com-

mittee—is one of the very necessary steps required for reducing the dust hazard.

There is not, at the present time, any requirement for dust control—under any State law—in the metal mines of Montana. Such control as does exist is purely voluntary on the part of the companies and, as the record shows, has not been adequate.

H. R. 9343 and the other similar bills before this committee provide for the establishment of a joint advisory committee to—

* * * promulgate a code of reasonable standards and rules pertaining to safety and health conditions—

in metal and nonmetallic mines. This code necessarily would have to contain standards on dust control and dust control methods which would guide Federal inspectors in their inspection of mines.

We know that as these bills are now written, there is no requirement of compulsory compliance with either the code or the recommendations of a Federal inspector. We believe, as experience with coal mine inspection laws has shown—that a compulsory compliance requirement would be far more effective. As contrasted with the present situation, however, we strongly believe the proposed code would stimulate greater effort in the elimination of dust-producing practices.

ACCIDENTS

The situation on accidents in Montana metal mines is far from good. Its most alarming aspect is the sharp increase in the rate of fatal accidents over recent years.

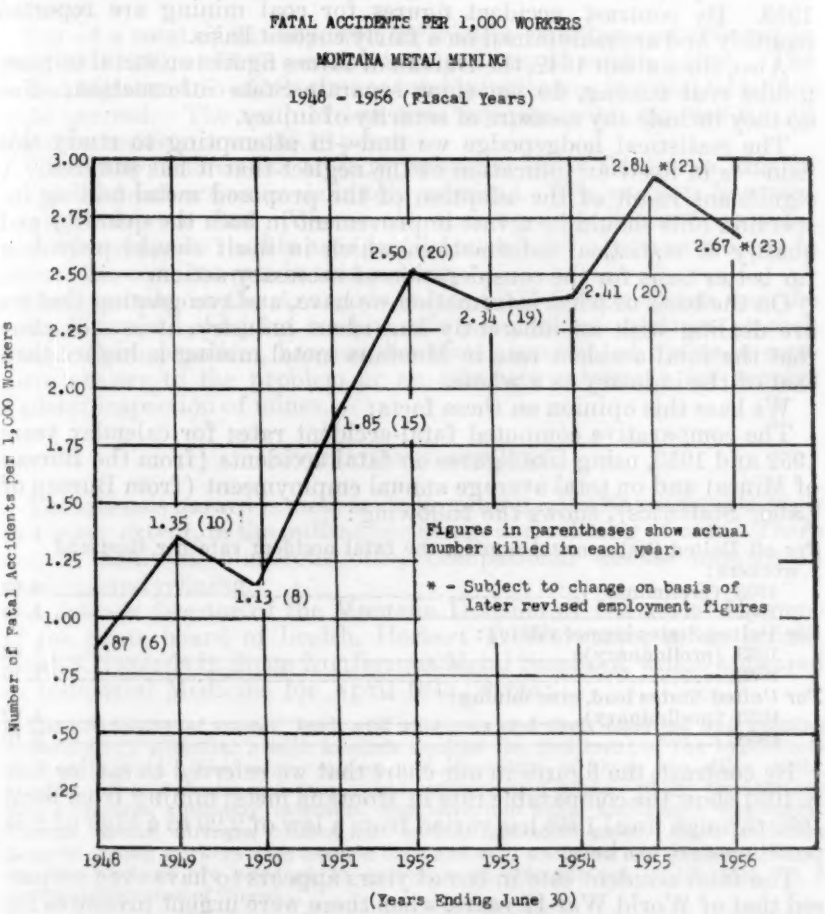
Available accident figures of the past 4 years show that, on the average in any one year 1 out of every 7 workers has suffered some injury on the job; 1 out of every 59 workers employed has suffered some permanent injury on the job; 1 out of every 386 workers employed has suffered a fatal injury on the job.

There are some industries in the State that show a higher number of total injuries. Over a long period of years, however, metal mining has consistently ranked first among all industries in both the number and rate of permanent injuries and fatalities.

Reasonably complete figures on accidents in Montana industries have been issued by the industrial accident board for only the past 4 fiscal years. Prior to that, annual reports of the board contained only scattered data. The only constant measure that we could trace back for any number of years was the total number of reported fatal accidents in metal mining. Relating this yearly figure to total average employment (as reported by the Montana State Employment Service) we have computed a fatal accident rate figure for the fiscal years 1948 through 1956.

The results are shown in our chart Fatal Accidents per 1,000 Workers in Montana Metal Mining, 1946–56 (fiscal years) which I now refer the committee's attention to.

(The chart referred to is as follows:)



Mr. SALVAS. Next to each rate figure (see chart above) there is included, in parentheses, the actual number of fatal accidents in each of these years. We started with the fiscal year 1948 because that was the first year for which figures were available from which a fiscal-year average employment figure could be computed.

The chart shows a truly alarming increase in fatal accidents per number of workers. There was a slight drop, it will be noted, last year, but even this most recent figure is still far above that of any year prior to 1955.

Again the question arises, How does this compare with the record in other States?

And again, because of the lack of standardized reporting by the various States and the United States Bureau of Mines, we can give only a qualified answer.

The Bureau of Mines reports annual accident figures for all metal mining, but does not use the same measures that are used here in Montana. Also, its figures are usually several years late. As of today,

for example, the latest annual figures available to us are those for 1953. By contrast, accident figures for coal mining are reported monthly and are maintained on a fairly current basis.

Also, since about 1942, the Bureau of Mines figures on metal mining, unlike coal mining, do not show separate State information. Nor do they include any measure of severity of injury.

The statistical hodgepodge we find—in attempting to study this field—is in itself an indication of the neglect that it has suffered. A significant result of the adoption of the proposed metal-mining inspection bills should be a vast improvement in both the quantity and quality of statistical information, which in itself should provide a far better basis for the consideration of necessary action.

On the basis of what information we have, and recognizing that we are dealing with an inherently hazardous industry, it is still clear that the fatal accident rate in Montana metal mining is higher than that of the industry as a whole.

We base this opinion on these facts:

The comparative computed fatal-accident rates for calendar years 1952 and 1953, using like figures on fatal accidents (from the Bureau of Mines) and on total average annual employmeent (from Bureau of Labor Statistics), shows the following:

For all United States metal mining, the fatal accident rate per thousand workers:	
1953 (preliminary)	0.94
1952	1.35
For United States copper mining:	
1953 (preliminary)	1.02
1952	1.13
For United States lead, zinc mining:	
1953 (preliminary)	1.82
1952	2.16

By contrast, the figures in our chart that we referred to earlier (see p. 103) show the comparable rate in Montana metal mining from fiscal 1952 through fiscal 1956 has varied from a low of 2.29 to a high of 2.84 per thousand workers.

The fatal accident rate in recent years appears to have even surpassed that of World War II years, when there were urgent pressures for filling military needs and there was a general increase in accidents.

For the 5-year period, 1941 through 1945, the average number of fatal accidents in Montana metal mining was 23 per year. The peak was reached in 1942 when 34 accidental deaths were reported in the mines.

During those years, however, total average employment was considerably higher. Using such figures as are available, a crude estimate of the average fatal accident rate for this 5-year period would be about 2.14 deaths per thousand workers—or much less than the average of 2.59 for the past 5 years.

Total accidents in smelting and refining are considerably less—both in number and rate—than in mining. There, too, however, the picture does not call for complacency. The Montana Industrial Accident Board report for 1956, for the first time, separates total reported injuries into those on which more than * * * to clear the record there is a misprint in our prepared statement—it should read: "* * * more than *one-half* day was lost * * *" and those reported as "no lost time." An analysis of these figures shows that the ratio of lost time injuries

to the total injuries for smelting and refining exceed that of any other industry.

Out of a total of 311 reported injuries in smelting and refining in fiscal 1956, 236, or 75.88 percent, involved loss of working time. The second highest ratio of lost time to total injuries was in metal mining—69.54 percent. The ratio of lost time injuries to all injuries for all Montana industries was 38.58 percent.

We firmly believe—as already indicated—that this is an area in which Federal action is definitely required. We are not, however, relying solely on that. We are also seeking through active cooperation of companies in this area to take such joint action as we can to reduce the accident rate in this industry.

For example, at the Anaconda mines in Butte, the union and the company now hold joint weekly safety committee meetings at each mine. Such practices, however beneficial, are not, of course, a complete answer to the problem or an adequate substitute for regular Federal inspection of mines.

OCCUPATIONAL DISEASES

The silicosis hazard is most acute in mining. It also exists, although to a lesser extent, in the milling, smelting, and refining of ores. There are, in addition, numerous other occupational disease hazards in smelting and refining.

A former director of the Montana Division of Industrial Hygiene of the State board of health, Herbert T. Walworth, in an article, Health Hazards in Some Nonferrous Metal Smelters, which appeared in Industrial Medicine for April 1945, wrote:

> The processing of copper, lead, and zinc ores and their smelting and refining present many potential health hazards as does the treatment of the byproducts of these metals. The most common and important of these are silica dusts, arsenic and lead dusts, and fumes, and sulfuric acid mists. Other hazards are zinc, cadmium, antimony, selenium, and tellurium dusts and fumes and sulfur dioxide, arsine, nitrogen oxides, and carbon monoxide gases. Skin irritation hazards among workers with arsenic dust and acid solutions are common. Many smelter workers are exposed to extremes of temperature which may be a contributing cause of illness.

That these hazards are still real—as well as potential—will, I believe, be made clear by later testimony from some of our members from smelting and refining in the State.

Nearly 6 years ago, to cite 1 instance, we had a serious accident in the Great Falls smelter in which 4 of our members died as the result of arsine poisoning and 4 others were hospitalized, but recovered. This kind of accident—as we will further develop in Washington—has occurred in several other copper and zinc refineries in other parts of the country.

We would like to direct the committee's attention to one of the serious conditions on which we believe further study and action appears to be required.

A Public Health Service monograph "A Quest Into the Environmental Causes of Cancer of the Lung" contains a table on lung-cancer mortality in several Montana counties. The author of the monograph, Dr. W. C. Hueper, is one of the world's leading authorities on occupational cancers. He is now head of the environmental section of the National Cancer Institute, Public Health Service, and is also Chair-

man of the Cancer Prevention Committee of the International Union Against Cancer.

We are submitting this table as our third and final exhibit.

Chairman METCALF. Under previous order all of these will be admitted at the point at which they were mentioned.

(The table referred to is as follows:)

TABLE 23.—*Lung cancer mortality in several Montana counties, 1947–48 (Lull and Wallach)* [1]

County	Total population, 1940	Major industry	Number lung cancers			Total cancer deaths	Percent lung cancer		Annual lung cancer death rate per 100,000	
			Male	Female	Total		Male	Female	Male [2]	Female
Deer Lodge	13,627	Copper smelting [3]	21	0	21	98	30.8	0	145.7	0
Silver Bow	53,207	Copper mining [3]	27	2	29	259	22.6	1.5	48.6	3.9
Cascade	41,499	Copper mining, smelting.[3]	20	5	25	299	12.7	3.5	46.3	12.3
Gallatin	18,269	Agriculture	1	0	1	81	3.0	0	5.2	0

[1] Personal communication of unpublished date.

[2] The estimated crude death rate for lung cancer among white males in the entire United States in 1947 was 10.9 per 100,000 population.

[3] The workers employed in copper ore mining and smelting inhale dust and fumes of arsenic contained in the ore and released as a byproduct and waste product during the smelting process.

Source: W. C. Hueper, M. D., A Quest Into the Environmental Causes of Cancer of the Lung. Washington, 1955. Public Health Monograph No. 36, p. 29.

Mr. SALVAS. The committee will note that footnote 2 of this table (see above) states:

The estimated crude death rate for lung cancer among white males in 1947 was 10.9 per 100,000 population.

Comparing that figure with the figure for Deer Lodge County, for example, the Deer Lodge County lung mortality rate for males is roughly 13.4 times the national average. The Silver Bow County rate is 4.5 times the national average and the Cascade County rate is about 4.2 times as large.

Mr. METCALF. As this record is going to be read outside of Montana, I think we ought to interpolate that Deer Lodge County is where the Anaconda smelter is, Silver Bow County is where the Butte mines are located, and Cascade County is where the Great Falls smelter is located.

Mr. FJARE. The chart shows copper smelting and copper mining and so forth.

Mr. SALVAS. Yes. The chart itself shows——

Mr. FJARE (interrupting). Copper smelting and——

Mr. SALVAS. Yes, but for the record, I think it is proper there.

Mr. FJARE. That Anaconda is in Deer Lodge County, Butte is in Silver Bow County, and that Great Falls is in Cascade County.

Mr. SALVAS. Yes.

In a comment on these figures, Dr. Hueper states:

Prolonged inhalation of arsenical dust and fumes appears to produce an increased liability to cancer of the lung (table 23, above).

In an earlier article on Environmental Lung Cancer, which appeared in Industrial Medicine and Surgery in February 1951, Dr. Hueper, in commenting on these same figures, stated:

> These observations are of only limited value since they cover too short a period of time, too small a number of cases, and no detailed data on the occupational and environmental aspects of the individual lung-cancer cases. However, the high frequency of lung cancer in counties where arsenic contamination of the environment is known to exist is of sufficient importance to call for a thorough and extensive study of the presence of a potential arsenic lung cancer hazard in all those regions in which existing occupational and environmental conditions warrant such investigations.

We strongly support his view that "a thorough and extensive study of the presence of a potential arsenic lung-cancer hazard" should be undertaken as soon as possible. As will be elaborated later, we believe that such a study should be done by the United States Public Health Service in cooperation with the State industrial hygiene division.

RECOMMENDATIONS

What should be done about this situation?

This committee, I am sure, would want some recommendations and, in particular, suggestions as to those areas in which action by the Federal Government would be called for.

The responsibility for Federal action in many health and safety activities has now been firmly established in many fields. Some of the more obvious examples of this are such Federal activities as are called for by the Federal Coal Mine Safety Act, the Social Security Act, the Food and Drug Act, the meat inspection services of the Department of Agriculture, and many, many others.

We see no need to supersede State agencies where they exist and where they are able to do an adequate job.

The main role of the Federal Government in this field, as we see it, is to stimulate, supplement, and coordinate State agencies, where they exist—and also to assure primary responsibilities in those areas in which State activities are obviously inadequate.

There are three main areas affecting health and safety in this industry in which we believe Federal action is called for. These can be briefly listed as (1) study and research; (2) mine inspection; and (3) workmen's compensation.

(1) Study and research: A basic need in this whole field is more and better information on both accidents and occupational diseases. We recognize that progress has been made over the years and yet, as many experts have pointed out, much more is needed.

As a means of remedying this situation, we specifically propose:

(*a*) Passage of the proposed bill on Federal inspection of noncoal mines. This would, among other things, give us a much better body of information from which we could regularly appraise the situation and take such further action as might be called for.

(*b*) A joint coordinated survey of the health and working environment of metal mines, smelters, and refineries in Montana. We urge that such a study be jointly undertaken by the United States Public Health Service, the Bureau of Mines, and the industrial hygiene division of the Montana State Board of Health.

This kind of study was last done on a similar basis in the State of Utah in 1939. It produced some very valuable information and did eventually result in several improvements of conditions. A Montana study, we believe, in addition to covering silicosis, should cover all other known and suspected diseases of occupational origin.

(*c*) Establishment of a National Industrial Health Institute in the Public Health Service similar to the already existing National Cancer Institute, National Heart Institute, and others.

We urge this committee to sponsor a bill providing for an establishment of such an institute.

The basis for this proposal is the generally recognized need for continuous medical and engineering research in the field of industrial health. Any study of the silicosis problem, for example, uncovers numerous areas in which the so-called experts themselves either can't agree or don't know the answers.

For example, for many years experts have been recommending a so-called maximum permissible allowance of 5 million particles per cubic foot (where free silica content is high) as the limit above which dust concentrations are dangerous. Yet, there is also evidence that in many places where the dust count has been reduced below that level, silicosis still develops. Many experts now question whether this is an adequate standard.

There are many other like problems and, in addition, many questions on medical aspects of the disease. An authoritative Federal Industrial Health Institute, by sponsoring and promoting needed research in this field, would greatly further our understanding of industrial diseases and should materially advance prevention and control methods.

(2) Federal mine inspection: We strongly support the proposed Mine Inspection Act for metal mines.

There is as much need for this kind of legislation in metal mines as in the coal mines. Coal mines, it is true, have a slightly higher accident rate. We have not had for many years the same type of catastrophic mine disaster in which large numbers are killed in one occurrence. That is because we don't have—to the same extent, at least—the problem of dust explosions and methane gas. We do have, though, a high incidence of other accidents and we also have a more serious silicosis problem.

A further basis for Federal inspection of mines is that, by imposing nationwide standards, we would be removing the possibility of using unsafe conditions as a competitive cost factor in the industry.

Making mines safer is, we know, a costly business. An employer who is permitted to maintain low standards has an unfair advantage over other employers who must maintain high standards.

The extra cost that might be involved in meeting industrywide safety standards would be more than compensated for by other gains. Production losses from accidents would be reduced. More workers' lives would be saved. And the community as a whole would be spared the vast economic and social losses of industrial accidents and diseases.

(3) Workmen's compensation: Montana is one of the few States in the Union (there were three at last count) which does not include silicosis as a compensable disease.

We have contended for many years, in every mining State, that employers should be required to bear the costs of occupational dis-

eases. Here in Montana the limited benefits provided out of public funds leaves the great majority of silicotics unprovided for.

An adequate workmen's compensation law, among other things, compels industry to exert greater efforts to control accidents and diseases. In Canada, for example, where compensation legislation is generally recognized as far more advanced than in this country, the latest figures we have seen showed that out of an average employment of 23,000 workers in Ontario gold mining only 8 new cases of silicosis had been uncovered since 1928. There is, of course, more to the Canadian picture than the superior compensation laws. The fact that the average cost to the employer of a compensated silicosis case is about $12,000 has, though, unquestionably stimulated greater efforts to reduce the dust hazard.

We believe there is ample basis for a Federal Compensation Act to cover hard-rock miners with silicosis. One important reason is the fact that many miners over the course of years work in more than one State and frequently find themselves disqualified because of eligibility requirements from receiving compensation in any one State. We believe that ultimately Federal compensation legislation for silicosis will be necessary.

In the meantime, improvement of State laws is urgently required. That, we know, is primarily a State matter, but the Federal Government would greatly stimulate efforts in this connection by enacting a bill such as H. R. 2622, introduced by Mr. Metcalf in the 1st session of the 84th Congress.

In brief, that bill would provide for Federal payments to States whose compensation laws meet certain prescribed minimum standards. The standards set forth on the bill are generally superior to those now existing in Montana State laws.

We urge this committee to recommend the adoption of legislation of this kind by Congress.

In closing, Mr. Chairman, I should say that I am aware that my testimony here has been somewhat statistical and technical. It is impossible through cold figures alone to give a complete picture. Statistics don't tell the story of broken lives and economic disaster that follow in the wake of a mine accident or the contracting of silicosis by breadwinners. They don't tell the story of shortened lives, destroyed limbs, physical and mental suffering, fatherless children, and destitute widows.

That story is told on the headstones of the graveyards and in the pathetic procession of the lame and the halt down the main street of any mining town in America.

I submit, members of this committee, that it's time we did something about it.

Mr. METCALF. Thank you, Mr. Salvas, for an excellent statement. I believe that the members of the committee will have some questions to ask you.

Mr. Elliott.

Mr. ELLIOTT. First, I would like to thank Mr. Salvas for his very well-prepared and well-delivered statement. If I understand your exhibits, they show, with reference to the number receiving silicosis benefits in Montana, that that number as of about now in 1956—or as of the first of the year, maybe, in 1956—shows a total of 611 receiving silicosis benefits; and you make the contention, I believe, that that is

not nearly all of them, because your benefit system here in Montana is not couched in the proper legalities to enable you to get a list, a complete list of all silicosis victims?

Mr. SALVAS. Yes.

Mr. METCALF. Mr. Salvas, I wish you would explain to Congressman Elliott just how silicotics do receive benefits in the State of Montana.

Mr. SALVAS. Well, it wasn't a direct question. I want to point out that the 611 shown for 1956 on the chart is the actual number receiving silicosis public-welfare payments on June 30 of this year. These are fiscal—you said "January 1," and I want to make it correct. The eligibility requirements for receiving these public welfare payments are rather stringent, as I pointed out in my text—10 years of continuous residence in the State, complete total disability from the standpoint of being unable to earn a living by manual labor.

Mr. ELLIOTT. You have no idea how many other silicotics there might be in Montana?

Mr. SALVAS. Well, that's one of the things that I tried to point out in my statement, too—the lack of information, the lack of study and completeness of figures from which people can find out these things. There certainly isn't enough information, and this is the best we were able to do for the purpose of the hearing here.

Mr. ELLIOTT. Would it be your judgment that there was at least an equal number of first- and second-degree silicotics, I believe you call them, that are not shown by your chart?

Mr. SALVAS. Well, in my statement here we refer to the number of first- and second-degree silicotics, too, and the proportion that is generally thought to exist to the third degree.

Mr. ELLIOTT. Well, what was that? I don't recall.

Mr. FJARE. I think your statement here reads the number of partially disabled, so-called first and second silicotics, according to various studies, has varied from 3 to 10 times the number of third-stage cases.

Mr. ELLIOTT. And this 611 would be third-stage cases?

Mr. SALVAS. Oh, definitely, yes. They are all third-stage.

Mr. ELLIOTT. Now, with reference to your second chart styled, Fatal Accidents per 1,000 Workers in the Montana Metal Mining, 1948–56 (Fiscal Years), as I read this chart, on June 30, this year, you have 2.67 fatal accidents per 1,000 workers or at that rate; now, I want to ask you: Does that 2.67 on that chart mean that for the year, for the fiscal year 1956 in Montana in the metal mines you had that ratio of deaths?

Mr. SALVAS. Yes.

Mr. ELLIOTT. Per 1,000 workers?

Mr. SALVAS. Per 1,000 employees. Now, as you will note, there were 23 deaths in that fiscal year ending June 30, 1956. It could be changed only from the standpoint that the Employment Service, from whom we get the figures as to the number of people employed in the metal-mining industry, are constantly revising their figure and that might cause it to vary slightly.

Mr. ELLIOTT. I think your suggestion here, I made a notation of it, your suggestion on page 7, which reads:

> We urge this committee to sponsor a bill providing for an establishment of such an institute—

which refers there to (*c*) in your statement, which is, and I quote:

> Establishment of a National Industrial Health Institute in the Public Health Service similar to the already existing National Cancer Institute, National Heart Institute and others.

is a most excellent suggestion to this subcommittee, and I think it should be done at the earliest possible date. I agree with you completely about that.

Mr. SALVAS. Thank you, Congressman Elliott.

Mr. METCALF. Thank you, Mr. Elliott. Congressman Fjare?

Mr. FJARE. Personally, of course, I'm not completely familiar with silicosis, as such. A man working in a mine, how long after he has been exposed to too much silica dust does he become aware of silicosis; and let me ask this: What are the first symptoms of silicosis?

Mr. SALVAS. Well, of course, you asking me a medical question——

Mr. FJARE. Well, I realize that and I appreciate that your answer has to be qualified to that degree, but you are undoubtedly familiar with the problem?

Mr. SALVAS. Well, as far as definitely determining whether he has silicosis or not, is a medical question, I would say——

Mr. FJARE. Yes, I realize that.

Mr. SALVAS. And I don't feel qualified to answer a medical question, Congressman.

Mr. FJARE. My purpose in asking that question, of course, is perpetrated by a further question: The turnover of miners in the mines here in Montana, would that have something to do with the possibility of being contacted or contracting silicosis in another area and coming into Montana and having it show up? Now, would your figures, by any means, give a breakdown of say out-of-State miners who come into this area and subsequently or very shortly thereafter become aware of having contracted silicosis, which is, I think, important for us to know as a matter of local mining conditions and the safety factors involved?

Mr. SALVAS. Well, in an effort to try to answer your question as best that I can, Congressman, there's no doubt, and we point out that there is the need for the Federal Government to be involved in the question of silicosis is because of the migration of mineworkers.

Mr. FJARE. I was leading up to that as being a very——

Mr. SALVAS. Now, there are, no doubt, some of them who in the course of their mining in the industry pick up their silicosis in various places.

Mr. FJARE. Does your organization classify Montana's mining industry, as a whole, as being one of the more hazardous areas in the United States, the metallic mining industry, or less, or average?

Mr. SALVAS. Well, according to our studies, Congressman, the—and here, again, it is a question of the lack of available information, which is a real tragedy when you start looking into this thing, according to our studies, Montana has, in our estimation, a slightly worse record than the industry as a whole.

Mr. FJARE. Now, you are speaking of the record, are you not?

Mr. SALVAS. Yes.

Mr. FJARE. The silicotic record of miners in Montana; is that correct?

Mr. SALVAS. The silicosis and the accident record, too.

Mr. FJARE. Now, you would place that direct relationship to mining conditions here, then?

Mr. SALVAS. Well, this—our reports are based on the figures we received from the governmental agencies on the metal-mining industry with respect to accidents, fatalities, and then from the Public Employment Service and things like that on the silicosis.

Mr. FJARE. Now, I am assuming then that you are assuming that mining hazards or the hazards of mining are worse in Montana than they are throughout the United States in the metallic mining industry; is that correct?

Mr. SALVAS. As far as we were able to get correct information on that.

Mr. FJARE. I understand and I want to be sure that you are assuming that.

Now, is that assumption based on a lack of interest in mine safety or is it also contributable, perhaps, to the condition of the type of ore we mine—there's undoubtedly one type of ore which contains more silica, which, of course, brings on silicosis; is the actual type of ore which we mine the thing that contributes toward that record or is it, in your opinion, a lack of interest on the part of management in dust elimination and so forth?

Mr. SALVAS. Well, in my estimation there is just a lot of factors that go to make this up, and I don't think that you are going to take and say that this can be attributed to any one single reason; it's a combination of a lot of things that may bring this about.

Mr. FJARE. You have no personal charge, as you might put it, in this respect?

Mr. SALVAS. One thing that handicaps me——

Mr. FJARE. Let me put it this way: Is our ore, the ore we mine, more dangerous than in other areas, in your opinion?

Mr. SALVAS. Well, I tell you one thing that handicaps me here, Congressman, is the fact that the only part of the mining industry where I myself have been personally employed is right here in the State of Montana——

Mr. FJARE. I am thinking, of course——

Mr. SALVAS. So I don't know what the conditions are in the other States.

Mr. FJARE. Naturally, as a Montanan, I am jealous of Montana, and I hate to realize that we have a bad record, whether it is in mining or otherwise, and I like to know why.

Mr. SALVAS. I do, too.

Mr. FJARE. I think that is all for the moment, anyway, Mr. Chairman.

Mr. METCALF. Surely. Thank you, Mr. Fjare. Well, continuing what my colleague brought out: Isn't one of the reasons that we have difficulty in finding out about the status of Montana as compared with others that there is a lack of uniform reporting procedure?

Mr. SALVAS. That is certainly true, and I want—would like to point out, Mr. Chairman, that there may be other States with a worse record, we can say, than this, but the only thing we were able to compare it with was the industry average; and, as you point out, what little information we were able to get.

Mr. METCALF. And you are testifying from your own knowledge of conditions here and from the very sparse statistical information that is available with relation to other mining areas, about which you have no personal familiarity; and, of course, one of the purposes of the proposed legislation, or any other legislation that might replace it, would be to provide for uniformity of reporting procedure. Now, none of the bills that are before us, and I don't think any of the bills that are contemplated by members of this subcommittee, provide for any compulsion. They provide merely for an inspection, for reporting and for dissemination of information; and do you agree that, in this special area, we can get along without compulsion?

Mr. SALVAS. I would say this, Chairman Metcalf: That the experience the coal miners had in relation to Federal legislation is that they got improvement, my understanding is, through legislation which didn't have compulsion; but also their experience is shown, after they got the Federal legislation, that they needed the compulsion to make it more effective and to produce better results; and I think that, generally, that probably, that condition would also apply to the nonferrous industry—that compulsion would contribute to a greater lessening of the accidents and the silicosis hazards, occupational disease hazards, and so on.

Mr. METCALF. Yes. Now, you mentioned on page 6 of your testimony, an incident that occurred in Great Falls in which there were four fatal accidents as the result of arsine poisoning and others were hospitalized; you mentioned that in Washington a similar accident had occurred; if there had been a joint, uniform system of reporting and standardized inspections and, in return, a dissemination of information about the occurrence in Washington, might that Great Falls incident have been prevented, or, if the Great Falls incident was first, the Washington incident been prevented?

Mr. SALVAS. Well, the reference to Washington, Chairman Metcalf, is that——

Mr. METCALF. Oh, yes—"As we will further develop in Washington"—I see.

Mr. SALVAS. But with reference to your statement on it, yes. If there was an exchange of information and information centralized on all of these things, yes.

Mr. METCALF. And you say, "has occurred in several other copper and zinc refineries in other parts of the country;" and in discussing this legislation with some of my colleagues or cosponsors they felt that there isn't enough information about what's happening in one mining area and the means taken to prevent accidents in it or occupational disease or health hazards, so that other mining areas can take advantage of it—that is, the knowledge that has been ascertained?

Mr. SALVAS. Yes; and if I might add?

Mr. METCALF. Surely.

Mr. SALVAS. That's where the development of standards of practices could be made through a thorough study like that, where after the study was made and the standards were established, everybody would be working on the same level.

Mr. METCALF. I think that is all, unless there is further questions?

Mr. FJARE. One more, Mr. Chairman.

Mr. METCALF. Mr. Fjare.

Mr. FJARE. I notice in your statement on page 5 of your statement, something that is rather interesting and that I would like to delve a little into, it says:

> For example * * *, the union and the company now hold joint weekly safety meetings at each mine.

Now, I assume, under those conditions and in the terms of those meetings that the union, through perhaps grievance committees and so forth, brings the attention of the management to safety hazards that exist in the mines, is that correct, that's the purpose of it, is it not?

Mr. SALVAS. Yes.

Mr. FJARE. How effective are your complaints? If you recognize and draw the attention of the management to a safety hazard, do they move to correct it? How successful are you in that degree?

Mr. SALVAS. I think generally that that is done. I want to say that the work of joint safety committees is fairly new, however, we haven't had them in operation too long and there is considerable organizational work to do on them to improve their operation. They are feeling their way along so far. We are satisfied that they are moving and making progress, but, there too, we can make more progress by getting them working better jointly with management; and in the past few months, particularly, there has been more effort on the part of the union and management here and in other places to make these committees work more effectively and do a better job.

Mr. ELLIOTT. May I interrupt you right there?

Mr. FJARE. You bet.

Mr. ELLIOTT. What is the basis for setting up the joint management-union committees? How was that done?

Mr. SALVAS. Well, it was actually discussed in the contract negotiations between the company and the union.

Mr. ELLIOTT. Is it a part of the contract? Is that procedure a part of the contract between the operators and the union people who work in the mines?

Mr. SALVAS. In most instances it is, and, even if it isn't spelled out in words, there is an agreement on it and most operations have it.

Mr. ELLIOTT. Thank you.

Mr. METCALF. Will you yield a moment?

Mr. FJARE. Yes, you bet.

Mr. METCALF. Wouldn't it be better, perhaps, to withhold any Federal interference whatsoever and leave this to your negotiations across the table at the time that the union and the employer negotiate?

Mr. SALVAS. If you just want a yes or no answer to that—no, I don't think so.

Mr. METCALF. Why?

Mr. SALVAS. Well, because the Federal Government is charged with advancing the general welfare of the people of the country; and here certainly is a field in which that can be done. It's a field in which, as we pointed out, there are experts who over the years tried to point up the problems and not too much has been done about them.

Mr. METCALF. You feel that this is an area in which not only the public interest but the very nature of the problem is such that it is not capable of being resolved in contract negotiations?

Mr. SALVAS. I guess that's right.

Mr. METCALF. Thank you. Go ahead.

Mr. FJARE. I have become quite intrigued with many things about mining which I had not been aware of since I went underground for the first time yesterday and again today; I became interested, particularly, in the contracting work that we have in some of the mines; do you, as representing the union, and does the union as a whole, feel that the operating or this mining by contract contributes to accident rates? Now, I am just thinking out loud, and I can imagine myself going into the mine as a contractor, and, perhaps, in my zeal to earn more pay by moving more rock, I may personally become careless and thus increase the accident rate; what is the point of view of the union on that particular phase of safety? Now, it must either in there somewhere, in your thinking on this matter, does it not?

Mr. SALVAS. My personal opinion is, and I was a contract miner myself for quite a few years, is that it does.

Mr. FJARE. Contribute to the injuries?

Mr. SALVAS. To the injuries; yes.

Mr. FJARE. Therefore, would you recommend any such legislation of a Federal nature that such type of mining be outlawed, so to speak?

Mr. SALVAS. No; I wouldn't recommend it.

Mr. FJARE. How, then, would you accomplish safety?

Mr. SALVAS. Well, safety is considered pretty much economic, I think by management.

Mr. FJARE. Well, I am following this up so that I can keep track of your philosophy here, and you are suggesting that the Federal Government come in by law and compulsorily establish safety standards which are to benefit the welfare of the people as a whole, yet you would not recommend that the Federal Government come in and deny the privilege of using the contract method of mining, yet it is a prime contributor to injuries?

Mr. SALVAS. Well, I will say it is a contributor, but I am not going to say it is a prime contributor. As I said before, I think there is a lot of factors that go to make up whose responsible and what happens on this question of safety. I wouldn't say it is a prime contributor, but it certainly is a factor in it, but that doesn't solve the thing—to get rid of the contract mining. I certainly wouldn't say that.

Mr. FJARE. Well, I wouldn't presume that it possibly could, no; I was just wondering how important you felt it to be in the field?

Mr. SALVAS. It's a factor, but the point is that when the—it costs more to pay for injuries and disease that are caused through the industry—the working industry—the conditions in the industry, then conditions will be changed so that there will be less accidents and less disease.

Mr. FJARE. One more, and then I will yield. We were yesterday briefed on content of silica per cubic foot as being a threshold or a safe area in which miners can breath and receive no, or at least theoretically, receive no harmful effects; now, I understand from your statement that you believe that those thresholds or those minimums are not adequate, you feel that these standards that have been established by research, are not correct and that you think they need revision?

Mr. SALVAS. Well, I believe there is some dispute amongst experts as to the correctness of those standards that they have been using.

Mr. FJARE. That's all.

Mr. METCALF. Any more questions?

Mr. ELLIOTT. Yes; I want to pursue one idea that Mr. Fjare and Mr. Salvas developed here. This business of contract mining is pretty popular with the ordinary miner, is it not, because it gives him an opportunity if he wants to work hard to earn more money and thereby includes the system of incentives that everybody likes—in other words, it puts a premium on the fellow who is willing to work harder and to try harder, and I get the impression from talking with miners at home, as well as a few here, that the fellow who mines, whether it be coal or metals, doesn't want to give that system up, does he?

Mr. SALVAS. Generally speaking, I think that's true, Congressman.

Mr. ELLIOTT. In the majority of cases I think that would be true, so we've got to figure some way to retain those incentives and add, if possible, another incentive to make for greater safety at the same time we are making more money; and I don't know enough about mining to know just how that could be done; do you have any suggestions along that line?

Mr. SALVAS. Well, the way it is now, just generally speaking, again, there is a premium, in effect, on not being too concerned about safety, and there is a penalty on the worker who works safe; that has to be reversed.

Mr. FJARE. You mean an economic penalty—excuse me.

Mr. SALVAS. When I am talking about a premium, I am talking about an economic one; now, that's generally speaking.

Mr. ELLIOTT. In other words, you are going to have to give a few incentive points to the fellow who works safely as well as the one who produces larger amounts of the ore or whatever it may be; well, now, the second point: I am inclined to feel that this idea of joint union-management safety committees, whether by mutual agreement or by contract or however you might arrive at it, is a very good method of approach to the problem of bringing about more safety, but I was a bit surprised here to find out that there are so few figures on a national scale or from the States, from which you can develop guidelines for safety; and that brings to mind the fact that one of the contributions that I feel inspections of coal mines has made is that for coal mines you do have most excellent statistics for comparative purposes.

Mr. SALVAS. And, as I pointed out they are current, up to date, monthly, and on State levels and national level. It is very important, I think.

Mr. ELLIOTT. That's all, Mr. Chairman.

Mr. METCALF. Thank you, Mr. Salvas, for a most informative and a most helpful statement, and I want to compliment you on the way in which you have worked it out and the splendid way in which you have presented it.

Mr. SALVAS. Thank you, Chairman Metcalf, and other members of the committee.

Mr. METCALF. I think that I will call a brief recess for 10 minutes. We will reconvene at 3:10.

(Whereupon the hearing recessed at 3 p. m., to reconvene at 3:10 p. m., Tuesday, September 18, 1956.)

Mr. METCALF. The committee will be in order. The next witness will be Mr. Barney Rask, who is recording secretary of Butte Miners Union, No. 1. The Chair wants to make a brief statement, that Mr. Rask was one of the members of the Butte Miners Union who accompanied the subcommittee in its tour of the mines yesterday when we went through the Kelly mine, this morning when we went through the Mountain Con mine, and accompanied us over to the various research installations that we were shown for providing proper air and ventilation in the mine, and we welcome you with us and we are glad you took the time to accompany us in that tour of the mines, Mr. Rask, and we are glad to have you here.

Mr. RASK. You are welcome.

STATEMENT OF BARNEY RASK, RECORDING SECRETARY, BUTTE MINERS UNION, NO. 1

Mr. METCALF. Have you a prepared statement?

Mr. RASK. No. I have some records that I will submit. My name is Barney Rask and I am the recording secretary of the miners union. Since January of 1955 I have been down the mines, I will say, on 80 percent of the fatalities underground.

For this hearing a committee of the miners union went to the Silver Bow County coroner's office and through their records we have discovered that since the year 1930 through August of 1956 there have been 346 fatalities in and around the mines.

Mr. ELLIOTT. Will you give those dates again, Mr. Rask?

Mr. RASK. From the year of 1930 through August of 1956 we have found that there have been 346 fatalities in and around the mines.

Mr. ELLIOTT. Now, when you say "in and around the mines," what mines do you mean?

Mr. RASK. The mines in Silver Bow County or that belong possibly to the Anaconda Co.

On these records we have the name, the mine, the date, and the cause of the accident, and I want to submit these to the committee for records.

Mr. METCALF. It is your objective that these be made a part of the record?

Mr. RASK. Right.

Mr. METCALF. Unless there is objection these will be made a part of the record at this point.

(The matter referred to is as follows:)

Fatal accidents in Butte mines

[Compiled from records of Silver Bow County Coroner's Office]

Name	Mine	Date	Cause
		1930	
John H. Kangas	Otisco Mine	Jan. 22	Natural.
William Madden	Anaconda Mine	Feb. 13	Hemorrhage lung.
Allen A. Ewan	Belmont	Feb. 19	Bad air.
Jacob Jacobson	do	Mar. 20	Fall of ground.
C. A. Roberts	do	Mar. 22	Do.
P. Joyce	do	Mar. 30	Motor accident.
P. J. McEneany	Badger	Apr. 2	Muck pile sliding.
Tony O'Buchicz	St. Lawrence	Apr. 10	Hit by falling lag.
Pat Murphy	Mount Con	Apr. 11	Fall of ground.
J. L. Buckly	do	Apr. 10	Motor accident.
Vaino Vuorala	West Colusa	Apr. 19	Falling timber.
R. A. Callen	Steward	May 20	Fall of ground.
M. E. Glase	Tramway	May 23	Motor accident.
M. Turtisinen	Badger	May 27	Fall of ground.
Mick Anderly	Steward	June 19	Blast.
J. S. Kirby	do	June 20	Fall in chute.
G. A. Self	do	June 27	Fall of ground.
F. E. Winginback	Belmont	Aug. 7	Natural.
Adolph Johnson	Mount Con	Sept. 11	Fall of ground.
James Sly	Berkley	Oct. 18	Shaft accident.
J. Chisholm	Badger	Oct. 28	Blast, possible suicide.
G. O. Clark	do	Nov. 26	Fall of ground.
J. Visser	West Colusa	Dec. 18	Do.
J. M. Mullholland	Black Rock	Dec. 25	Injured Apr. 7, 1931.
W. A. Lantis	Badger	Dec. 22	Motor accident.
Total, 25.			
		1931	
L. G. Moshure	Badger	Feb. 11	Injured Nov. 14, 1929.
L. F. McGavin	Tramway	Feb. 12	Motor accident.
John Hocking	Badger	Feb. 25	Fall in chute.
C. Salo	Tramway	Mar. 3	Shaft accident.
F. Peskulich	West Colusa	Mar. 21	Fall of ground.
E. O. Smith	Mount Con	Apr. 3	Cut foot with ax.
Alex Gritz	Badger	Apr. 8	Natural.
J. Casarotta	West Colusa	Apr. 11	Head injury.
W. J. Clements	Tramway	Apr. 17	Motor accident.
G. Marinakis	do	Apr. 27	Fall of ground.
L. E. Culver	East Colusa	July 30	Shaft accident.
J. L. Amiet	Badger	Aug. 10	Fall of ground.
Papsi Maroni	do	Aug. 15	Do.
Niel Murphy	Tramway	Aug. 17	Undetermined.
S. E. Daly	Mount Con	Sept. 9	Do.
Pat McDevitt	Badger	Sept. 29	Fall in chute.
Esa Koieti	do	Sept. 30	Fall of ground.
J. Erman	Tramway	Oct. 10	Falling timber.
H. Walters	Emma	Nov. 13	Do.
Total, 19.			
		1932	
J. Serba	Mount Con	Feb. 4	Fall of ground.
G. Brynn	Badger	Apr. 29	Do.
H. L. Ginnette	Leonard	Apr. 30	Fall in shaft.
M. C. Galpin	Mount Con	June 4	Blast.
C. M. Giles	do	Nov. 28	Fall of ground.
Elmer Edwards	do	Dec. 27	Motor accident.
Total, 6.			
		1933	
N. Liqounakis	Emma	Jan. 18	Jump in shaft.
J. D. Richards	Anselmo	May 30	Not listed.
S. P. Curnew	Badger	Sept. 8	Blast.
Carl E. Larson	Mount Con	Oct. 20	Fall of ground.
Total, 4.			
		1934	
		None	
		1935	
V. D. Regan	Leonard	Feb. 1	Shaft accident.
M. W. Melich	Badger	Apr. 30	Blast.
D. Hujdur	Mount Con	July 5	Fall of ground.
E. Sparrell	Stewart	Aug. 7	Do.
Total, 4.			
		1936	
J. Kastoff	St. Lawrence	Jan. 14	Motor accident.
C. Martin	Belmont	Mar. 7	Fall of ground.
C. V. Hops	Steward	Mar. 26	Do.
J. Maloney	Belmont	May 15	Not listed.
B. Brannin	Mount Con	May 22	Fall of ground.

***Fatal accidents in Butte mines*—Continued**

[Compiled from records of Silver Bow County Coroner's Office]

Name	Mine	Date	Cause
		1936	
J. Serafine	Leonard	July 27	Motor accident.
E. Thomas	do	Sept. 29	Do.
J. E. Emmerson	Emma	Sept. 26	Died in dry.
R. Bendlo	Belmont	Oct. 3	Not listed.
L. B. Heffron	Leonard	Dec. 26	Fall of ground.
Total, 10.			
		1937	
D. L. Owen	Tramway	Jan. 11	Shaft accident.
C. Krewson	Mount Con	Feb. 13	Do.
G. Pratas	do	July 1	Fall of ground.
H. L. Larsen	do	July 7	Do.
A. A. Sawecki	Badger	----	Do.
A. McArthur	do	Aug. 1	Premature blast.
C. McCormick	do	do	Do.
Gordon Egbert	do	do	Do.
M. J. O'Rourke	Mount Con	Aug. 3	Fall in gob.
A. Hendricks	Leonard	Aug. 9	Motor accident.
C. E. Morris	Mount Con	Aug. 19	Not listed.
L. Vargas	Leonard	Sept. 24	Fall of ground.
K. Lahti	Badger	Sept. 17	Do.
B. Campbell	Mount Con	Oct. 13	Do.
J. Kylnik	do	Oct. 14	Do.
J. McDougall	Steward	Oct. 18	Freeing chute.
P. Thompson	Tramway	Oct. 31	Motor accident.
J. T. Hill	Mount Con	Nov. 23	Do.
V. Sorsa	Orphan girl	Nov. 24	Not listed.
Total, 19.			
		1938	
J. P. Zorst	Mount Con	Jan. 28	Fall of ground.
J. H. Armstrong	do	Mar. 9	Do.
Mat Pasley	Belmont	Apr. 26	Do.
A. Bertoglio	Orphan Girl	May 22	Fall.
H. L. Pinkerton	Anselmo	Aug. 31	Not listed.
J. Nolan	Belmont	Sept. 23	Fall in chute.
G. B. Gorton	Steward	Nov. 8	Do.
R. G. Whitehead	Anselmo	do	Fall of ground.
O. Gustafson	Belmont	Dec. 7	Do.
Total, 9.			
		1939	
S. T. Hoar	Leonard	Jan. 7	Shaft accident.
G. S. Seatriz	Belmont	Jan. 31	Fall of ground.
E. R. Clark, Jr.	Anselmo	Mar. 28	Do.
E. A. Carollo	Steward	Apr. 12	Do.
J. F. Sullivan	Mount Con	May 14	Motor accident.
S. Kanazisoff	Belmont	May 26	Fall in chute.
Leo A. Burke	do	June 1	Fall of ground.
G. C. Walker	Orphan Girl	June 5	Fall in chute.
H. D. Russell	Mount Con	July 7	Fall of ground.
O. McDevitt	Anselmo	Aug. 18	Do.
J. Tierney	Mount Con	Nov. 9	Do.
G. J. Jacesin	Steward	----	Do.
E. E. Toppola	do	----	Do.
L. J. Tyler	Emma	Dec. 28	Motor accident.
Total, 14.			
		1940	
M. Sivvula	Mount Con	Jan. 6	Not listed.
A. Kolemaine	Anselmo	Jan. 24	Fall.
G. W. Walters	Mount Con	Feb. 23	Fall of ground.
E. Shank	St. Lawrence	Apr. 21	Do.
K. Musold	Leonard	Apr. 30	Fall in chute.
R. Budell	Mount Con	June 18	Do.
W. A. Curruthers	Leonard	June 24	Fall in manway.
G. G. Kachigan	Mount Con	Aug. 18	Fall of ground.
A. Hill	St. Lawrence	Aug. 20	Do.
V. Donati	Leonard	Aug. 22	Surface accident.
J. Plumber	Mount Con	Aug. 23	Fall of ground.
Pat Harrington	Steward	Sept. 17	Gas and smoke.
Eugene Shea	Mount Con	Oct. 15	Fall of ground.
Fred H. Duarte	Belmont	Oct. 29	Do.
A. W. Weeks	Anselmo	Nov. 16	Do.
P. Sorini	Leonard	Nov. 19	Chute broke.
F. Ferderbar	do	Dec. 4	Fall of ground.
Total, 17.			
		1941	
Sante Chiocchi	Orphan Girl	Jan. 7	Fall of ground.
M. Roche	Mount Con	Jan. 15	Do.
P. J. Jelich	Belmont	Jan. 31	Do.
O. O. Strand	do	Mar. 7	Do.

Fatal accidents in Butte mines—Continued

[Compiled from records of Silver Bow County Coroner's Office]

Name	Mine	Date	Cause
		1941	
Nick Laurnich	Anselmo	Apr. 24	Motor accident.
Tom Edwards	Mount Con	Apr. 26	Fall of ground.
F. M. Bick	High Ore	May 7	Do.
F. McGarrity	Leonard	May 28	Motor accident.
A. W. Oja	Belmont	June 1	Fall of ground.
R. McCaslin	Emma	June 28	Do.
E. C. Sayeh	Tramway	Aug. 30	Not listed.
Joseph Taylor	Mount Con	Oct. 1	Fall of ground.
Ross Raybal	do	Oct. 9	Runaway chute.
J. A. Black	Leonard	Oct. 27	Not listed.
S. M. Christian	do	do	Do.
N. J. Butke	St. Lawrence	Nov. 15	Bad air.
F. M. Bugni	do	do	Do.
J. Thomas	do	do	Do.
C. Makela	do	do	Do.
Gerald Gustin	Belmont	Nov. 16	Motor accident.
M. Calcaterra	do	Dec. 6	Fall of ground.
S. Berganski	High Ore	Dec. 12	Not listed.
F. Miller	Mount Con	Dec. 31	Fall of ground.
Total, 23.			
		1942	
C. W. Long	Steward	Jan. 2	Shaft accident.
R. H. Sorutin	Mount Con	Jan. 22	Mucking machine.
John Lozier		Feb. 21	Injured Nov. 18, 1941.
O. Blanchard	Steward	Feb. 20	Fall of ground.
J. A. Harn	Leonard	Feb. 22	Do.
J. Cody	do	do	Do.
H. P. Lonville	Anselmo	Mar. 7	Do.
L. Schoolcraft	Tramway	Mar. 16	Motor incident.
E. McGivern	Anselmo	Mar. 17	Fall of ground.
F. J. Byrnes	Badger	Mar. 19	Do.
J. W. Holden	Steward	Apr. 9	Motor accident.
J. Malho	St. Lawrence		Shaft accident.
C. Leon	Belmont	July 11	Not listed.
D. W. Selfridge	Emma	July 30	Motor accident.
J. Monroe	Leonard	Aug. 15	Gob running.
J. W. Crouch	Belmont	Dec. 18	Motor accident.
Total, 16.			
		1943	
	Parnell	Feb. 6	Staging broke.
Fred Hill	Tramway	Feb. 25	
J. Doherty	Green Mountain	Mar. 13	Falling timber.
Carl Mercer	Steward	Apr. 1	Fall of ground.
G. Fawler	Belmont	do	Fall.
G. Birkholz	Leonard	Apr. 14	Fall of ground.
C. Wizeman	Emma	May 15	Motor accident.
A. Carabin	Badger	May 24	Fall of ground.
R. J. Sampson	Anselmo	May 26	Motor accident.
E. Phillips	Belmont	June 20	Do.
James Foy	Steward	June 22	Fall of ground.
G. A. Jacobson	Mount Con	June 29	Fall.
C. J. Coll	Tramway	July 14	Motor accident.
T. G. Davis	Anselmo	July 22	Fall of ground.
A. Young	Leonard	July 25	Do.
F. Coad	do	do	Do.
Edgar Young	do	do	Do.
Aaron Smith	Mount View	Aug. 6	Motor accident.
R. Hardesty	St. Lawrence	Aug. 31	Fall of ground.
Frank Cole	Emma	Sept. 16	Do.
J. Stepich	Mount Con	do	Do.
G. Gustavsen	do	Sept. 23	Do.
R. C. Thompson	Anselmo	Sept. 24	Mucking machine.
P. V. L. Cassidy	Mount Con	Nov. 8	Fall of ground.
T. Perez	Belmont	Nov. 11	Do.
J. Stinson	Tramway	Dec. 23	Motor accident.
Total, 26.			
		1944	
T. Topolovich	Anselmo	Jan. 12	Fall of ground.
J. V. Shea	Mount Con	Jan. 16	Runaway chute.
W. J. Knuckey	Belmont	Jan. 18	Bad air.
T. C. McDonald	Brittania	Jan. 24	Blast.
J. Peratto	do	do	Do.
W. Bergren	Steward	Mar. 15	Fall in chute.
S. Horoschak	Mount View	Mar. 26	Fall of ground.
E. L. Flannigan	Emma	June 3	Motor accident.
C. Stanich	Leonard	June 25	Fall of ground.
M. Malik, Jr	Badger	June 28	Do.
E. F. Mank	Tramway	Oct. 11	Do.
J. Burek	Mount Con	Oct. 29	Motor accident.

Fatal accidents in Butte mines—Continued

[Compiled from records of Silver Bow County Coroner's Office]

Name	Mine	Date	Cause
		1944	
J. H. Fellows	Anselmo	Nov. 15	Fall of ground.
J. J. Alekish	do	Nov. 25	Do.
Total, 14.			
		1945	
J. Turk	Leonard	Jan. 30	Do.
S. G. Everhardt	do	Mar. 27	Fall of ground.
C. Randell	Mount Con	Apr. 3	Not listed.
B. Ciabattani	High Ore	Apr. 9	Surface, fell in tank.
E. Cogan	Emma	Apr. 12	Freeing chute.
A. E. Kaiponen	Mount Con	Apr. 16	Fall of ground.
J. Dritzen	Tramway	May 1	Do.
T. Metseff	do	May 4	Do.
S. L. Barish	Mount Con	July 6	Do.
A. Nicholas	Leonard	Aug. 23	Surface.
F. Gelze	do	Oct. 21	Fall in stope.
Total, 11.			
		1946	
W. W. Johnson	Belmont	Jan. 23	Shaft accident.
C. Babcock	do	do	Do.
J. H. Witthoft	Leonard	June 10	Blast.
F. Galloway	Tramway	June 25	Motor accident.
J. Quell	Leonard	July 21	Fall in manway.
J. Heiser	Mount Con	Aug. 20	Fall of ground.
R. Bray	Leonard	Oct. 11	Fall in chute
F. H. Richards	Mount Con	Oct. 16	Blast.
S. G. Bates	do	do	Do.
J. Sullivan	High Ore compression plant.	Dec. 14	Air discharge.
Total, 10.			
		1947	
J. Harvi (Hara)	High Ore	Jan. 2	Cage accident.
W. Panion	Leonard	Feb. 17	Fall.
P. Harris	Tramway	Apr. 14	Blast.
S. Thompson	Mount Con	May 16	Fall of ground.
A. H. Lindgren	Anselmo	May 17	Motor accident.
C. Ansley	Granite Mountain	June 26	Fall in steps.
P. J. Deasey	Emma	July 11	Chute accident.
J. Baker	Granite Mountain	Sept. 30	Natural.
J. W. McClosky	Emma	Nov. 17	Fall of ground.
Total, 9.			
		1948	
G. Shovlin	Belmont	Feb. 14	Falling timber.
C. Wayhe	Badger	Mar. 5	Shaft accident.
F. Sullivan	Belmont	June 16	Motor accident.
S. W. Rawlings	Mount Con	June 17	Fall of ground.
S. C. Provost	do	July 10	Do.
H. S. Rawlings	do	Sept. 16	Do.
L. C. Farmer	do	Sept. 17	Do.
J. Spangler	Belmont	Oct. 8	Do.
F. Fellows	Leonard	Oct. 18	Natural.
T. V. Warila	Mount Con	Oct. 31	Fall of ground.
M. Vidrich	Emma	Nov. 9	Not listed.
Total, 11.			
		1949	
W. L. Glock	Anselmo	Jan. 11	Fall in chute.
J. Burke	Mount Con	July 22	Fall in skip.
D. G. Gunter	Anselmo	Aug. 24	Fall of ground.
A. Zugel	Mount Con	Sept. 28	Do.
R. D. Ransoms	Anselmo	Oct. 6	Do.
P. McLaughlin	Emma	Oct. 15	Fall in manway.
Total, 6.			
		1950	
J. Govednik	Belmont	Feb. 22	Skip chute accident.
J. M. Ryan	Anselmo	May 2	Surface, car slipped from blocks.
C. B. Olson	Leonard	May 16	Fall of ground.
J. F. Schoonover	Emma	July 27	Do.
W. J. Saunders	Mount Con	Aug. 1	Blast.
L. K. Flick	Travona	Sept. 1	Fall of ground.
T. C. Howard	Mount Con	Sept. 8	Buried by muck.
H. W. Silverthorne	Anselmo	Sept. 20	Fall in chute.
C. Frior	Orphan Girl	Dec. 2	Cage accident.
Total, 10.			
		1951	
J. P. Walsh	Mount Con	Jan. 6	Freeing chute.
C. C. Berry	Orphan Girl	Feb. 8	Fall of ground.
A. Silby	Emma	Feb. 24	Do.
J. Philpott	do	Feb. 26	Do.
D. P. Shovlin	Mount View	Mar. 29	Not listed.
A. A. Hovey	Badger	Apr. 26	Fall in chute.
E. W. Parris	Anselmo	May 4	Motor accident.

Fatal accidents in Butte mines—Continued

[Compiled from records of Silver Bow County Coroner's Office]

Name	Mine	Date	Cause
		1951	
C. J. Irwin	Mount Con	July 27	Hit by rock, man.
E. Haddox	do	Aug. 8	Motor accident.
W. J. Morrison	do	Oct. 5	Do.
J. Horacik	Anselmo	Oct. 23	Freeing chute.
Total, 11.			
		1952	
J. J. Thompson	Anselmo	Jan. 29	Fall of ground.
D. J. Gillies	Mount View	Jan. 31	Do.
H. C. Kraft	Emma	Feb. 12	Do.
J. C. Kin	Anselmo	Mar. 2	Fall in chute.
S. J. Trethway	Mount View	Mar. 26	Air hose.
T. R. Tumar	Travona	Apr. 16	Fall of ground.
O. Solim	Kelley	May 3	Motor.
J. T. Goforth	Leonard	May 14	Fall in chute.
N. Babich	Kelley	May 15	Surface, metal sheet.
J. Dulitich	do	May 28	Arm caught in timber hoist.
J. J. Visyiczke	Badger	June 16	Motor accident.
A. Bensen	Kelley	June 20	Do.
F. Wallace	Mount Con	June 25	Fall of ground.
H. Tielsore	Lexington	June 28	Fall in chute.
Dan Mullin	Original	July 13	Shaft accident.
J. W. Davis	Emma	July 20	Falling battery box.
M. Gallegos	Mount Con	Aug. 23	Fall of ground.
John Nelson	Travonia	Aug. 27	Motor accident.
H. R. Baldwin	Leonard	Sept. 21	Shaft accident.
C. Sisk	Badger	Sept. 22	Fall in chute.
A. P. Pogreba	Lexington	Oct. 4	Fall of ground.
Total, 21.			
		1953	
F. A. Valdez	Leonard	Jan. 9	Fall of ground.
M. H. Launius	Badger	Jan. 13	Chute accident.
J. Mistas	Kelley	Feb. 22	Motor accident.
T. H. Driscoll	Anselmo	May 31	Do.
F. X. Kraus	Leonard	June 19	Fall in chute.
Dan Delmoe	Emma	June 21	Fall of ground.
B. E. Langerquiest	High Ore	July 7	Falling rock.
M. Zyzniewski	Lexington	July 13	Bad air.
J. W. Estes	Kelley	Aug. 22	Motor accident.
A. T. Brown	Belmont	Oct. 10	Fall of ground.
E. Chaves	Leonard	Nov. 1	Fall in chute.
G. Trujillo	Kelley	Nov. 10	Do.
Total, 12.			
		1954	
E. Herron	Mount Con	Feb. 6	Fall of ground.
E. M. Rauch	Lexington	Feb. 10	Ground gave away under motor.
M. D. Johnson	do	Feb. 25	Fall of ground.
J. F. Quill	Kelley	Mar. 24	Motor accident.
M. E. Whitley	Mount Con	June 26	Fall of ground.
P. Horan	Lexington	July 20	Motor accident.
A. J. Marengo	Mount Con	Aug. 10	Fall in chute.
J. B. Blank	Rarus	Nov. 12	Fall of ground.
L. E. Painter	Mount Con	do	Do.
L. Johnson	Kelley	Nov. 23	Motor accident.
J. R. Pippin	Leonard	Dec. 27	Fall of ground.
E. Surpliss	Kelley	Dec. 28	Motor accident.
Total, 12.			
		1955	
G. J. Hoffman	Mount Con	Feb. 11	Fall of ground.
G. E. Sullivan	Belmont	Feb. 13	Fall in chute.
A. J. Ragle	Kelley	Feb. 14	Natural.
James Raiter	Anselmo	Feb. 25	Motor.
E. Hanley	Emma	May 10	Mucking machine.
C. C. Beggs	Lexington	May 18	Fall of ground.
Harry Bungard	Mount Con	May 30	Natural causes.
L. D. Smith	Kelley	June 11	Fall in chute.
A. Jaworski	do	July 1	Motor accident.
W. E. Bato	Emma	July 10	Surface, fall downstairs.
M. L. Bauer	do	July 29	Fall in manway.
W. A. Dawson	Mount Con	July 29	Fall of ground.
J. W. Payne	do	Sept. 4	Do.
C. Brickles	Kelley	Sept. 10	Motor accident.
John Scott	High Ore	Sept. 26	Bad air.
J. E. Morgan	Leonard	Oct. 9	Motor accident.
L. McBirnie	Anselmo	Oct. 25	Fall of ground.
J. F. McLaughlin	Emma	Nov. 19	Chute broke in manway
G. Rubush	Belmont	Dec. 2	Fall of ground.
Total, 19.			

Fatal accidents in Butte mines—Continued

[Compiled from records of Silver Bow County Coroner's Office]

Name	Mine	Date	Cause
		1956	
N. P. Sawyer	Mount Con	Feb. 6	Fall of ground.
W. E. Betz	do	Mar. 13	Motor accident.
G. H. Miller	Kelley	Mar. 21	Do.
M. H. Johnson	Lexington	May 17	Fall of ground.
G. A. Murray	Original	July 23	Do.
A. S. Romero	Mount Con	July 24	Do.
E. Backa	Kelley	July 26	Shaft accident.
W. Atkinson	Mount Con	Aug. 20	Fall in manway.

Mr. RASK. If there are any questions that the committee feels like they would like to ask me in regard to the time that I have been—that is January of 1955—investigating these accidents, I will be more than happy to try to answer them for you.

Mr. ELLIOTT. The figures you gave were for the years 1930—56 and would be, if I calculate it correctly, for 26 years?

Mr. RASK. 25½ years; yes, sir.

Mr. ELLIOTT. Well, dividing 26 into 346, I get an average of 13 per year. Now, in the year of 1930, you had a total of 25; 1931, 19; 1932, 6; 1933, 4; 1934, none; 1935, 10; 1936, 10; now, I assume that those low figures for those years are probably attributable to the fact that the mines didn't operate very much?

Mr. RASK. Right.

Mr. ELLIOTT. In 1937, 19; and in 1938, 9; and in 1939, 14; and in 1940, 17; and in 1941, 23; and in 1942, 16; 1943, 26; in other words you had the same number of accidents—you had 26 fatal accidents in 1943, and 25 the first year you started with these records in 1930?

Mr. RASK. Yes.

Mr. FJARE. May I ask a question, too? I notice here several cases throughout the list where the person is listed under "Causes of death" as "Natural," now, what does that mean?

Mr. RASK. In these records that is all that was stated in the record. It is possibly a natural death underground or something like that.

Mr. FJARE. Heart attacks or something like that?

Mr. RASK. They were deaths underground or around the mines.

Mr. FJARE. They dropped dead?

Mr. RASK. Dropped dead, right.

Mr. FJARE. Could you call that an accident contributable to the records on mining hazards and so forth? Truly?

Mr. RASK. Well, that I'm not——

Mr. FJARE. Well, to me, it doesn't seem fair that you would charge a "natural" death to hazards. I mean there are several of them listed—not a great number—but it just doesn't seem quite fair to me that you should list a person as having died from natural causes as being a victim of an accident at the mine. I mean in 1930 here, you've got, one, two. Now, let's take another one, for instance, such as—there may be others—you have one in 1933, and you have one: "Not Listed"?

Mr. METCALF. That's on page 2? (See p. 118.)

Mr. FJARE. Page 2 (see p. 118), for instance, at the bottom of page 2 (p. 118)—"Cause" was "Not listed"?

Mr. RASK. It is not in there.

Mr. FJARE. I am not saying that that was not an accident but——

Mr. RASK. These were taken from the report of the courthouse in the coroner's office, and through this report, we couldn't find what the cause of death was.

Mr. FJARE. Well, Barney, excuse me for calling you Barney, but I feel I know you so well that I call you Barney personally by your first name, but just because a miner dies at the site, I don't think that we will—to be fair, I don't think we can charge it to an accident if he just died of natural causes as listed here or "undetermined." I think the committee would like to know the value of these statistics which you give us, and those portions which are of doubtful value, I think, should be eliminated, if you agree?

Mr. RASK. Fine.

Mr. METCALF. Now, Mr. Rask, as I understand it, these are deaths that occurred underground and which the coroner investigated?

Mr. RASK. Right.

Mr. FJARE. Or on the surface; is that right?

Mr. RASK. At the mine area.

Mr. METCALF. So that there was a coroner's investigation, and as a result of his investigation he determined that two of them, for instance, in 1930, were the result of natural causes.

Mr. FJARE. But don't you agree, Mr. Chairman, that they shouldn't be listed as "fatal accidents"?

Mr. METCALF. Well, as long as we understand what he is——

Mr. FJARE. Yes.

Mr. METCALF. Showing, and the source of the statistics, we are able to evaluate the testimony.

Mr. FJARE. Yes.

Mr. ELLIOTT. Now, to continue with my line of questioning here: I notice that in 1944 the accident rate dropped to 14; in 1945 it was 11; in 1946, 10; in 1947, 9; in 1948, 11; in 1949, 6; in 1950, 10; in 1951, 11; and in 1952, 21—a considerable jump above your 26-year average of 13. Is there any particular reason for the high accident rate, comparatively speaking, in 1952, that you know of?

Mr. RASK. No. I can't say that I do. In 1952 we had a lot of these accidents, possibly. I notice in the year of 1952; no. I can't. I can't say why there were more in the year of 1952 than there were in the other years.

Mr. ELLIOTT. Then, in 1953, you are down to 12; 1 below your 26-year average; in 1954, 12, 1 below your 26-year average; in 1955, up to 19; and for 1956—I presume that's for only part of the year—the last entry is of August 20—and you haven't got the number, so I assume that—well, 1956 is for half the year, I believe you said?

Mr. RASK. That's right.

Mr. ELLIOTT. Well that would be 8 for a half year and if it is—well, it is hard to say if that year will be around your 26-year average or no. These figures are as official as any you have been able to get; is that right?

Mr. RASK. That's right, sir. The records, I might say, at the coroner's office are open to anyone who wants to go through them. You might find it a lot of work, but they are there.

Mr. ELLIOTT. These figures don't have to be reported to the State mines bureau or to the United States Bureau of Mines?

Mr. RASK. No.

Mr. ELLIOTT. So far as you know?

Mr. RASK. Not that I know of. In the State mines—they have a State mine inspector now. He also investigates, when he is in town, investigates the accidents underground, and I am sure that he keeps a record, for how long back I don't know; but for the last 2 years since I have been in office, I know that he has been in on most of the fatalities underground, on the investigations.

Mr. METCALF. Is that all your testimony, Mr. Rask?

Mr. RASK. Yes.

Mr. METCALF. Well, thank you very much for submitting these records for our records and thank you for appearing with us.

Will you come back, Mr. Rask? Mr. Fjare has some more questions here.

Mr. RASK. Yes, sir.

Mr. FJARE. The fact that I went in the mine yesterday and today doesn't make me a hard-rock miner yet; now you list a few of them as having died or being fatal accidents as the result of bad air—now, will you explain to me what that one, particularly, means?

Mr. RASK. Yes. Bad air is attributed to gases.

Mr. FJARE. No ventilation?

Mr. RASK. Right.

Mr. FJARE. Gases develop?

Mr. RASK. Right.

Mr. FJARE. All right, now, there was another one I didn't quite understand—"gob running"—what is that?

Mr. RASK. What year was that in?

Mr. FJARE. That is in 1942. (See p. 120.) Next to the last man in 1942: "Cause of accident: 'Gob running' "?

Mr. RASK. Well, "gob running"—that would be attributed to, possibly, miners going up alongside a fill, and the bog—the fill from the old workings, more than likely, buried him at that time, from the old workings—going up alongside of the old workings.

Mr. FJARE. Oh, here: "Died in dry"—what does that mean?

Mr. RASK. Well, the "dry" is the changehouse.

Mr. FJARE. That's an accident in the changehouse. I notice a possible suicide in here, too?

Mr. RASK. Yes, sir.

Mr. FJARE. I guess that's all, Barney; there were a few of these that confused me. I didn't know what we were talking about.

Mr. ELLIOTT. Just a moment, Mr. Rask. In the coal mines we have what we call disasters where people get killed, sometimes several. I think that actually the Bureau of Mines defines a "disaster" as 1 in which 5 or more people are killed in 1 disaster; but, not too frequently, thank goodness, but sometimes we have that kind of disaster in coal mining; but in looking over the list here of deaths and the fatal accidents in the Butte mines from 1930 to 1956, if there is a single incident or accident where more than 1 person was killed I didn't see it. It seems that all of these are single accidents; is that right?

Mr. RASK. You will notice in the year of 1941 (see p. 120) there were four men died as a result of bad air.

Mr. ELLIOTT. Yes; I had not seen that.

Mr. FJARE. Excuse me, Carl, would you yield?

Mr. ELLIOTT. Yes, certainly.

Mr. FJARE. That's a question that I want cleared up, too. I noticed this four men killed by "bad air"—were they trapped? Or was it a case of where carbon monoxide sneaked up on them, like it could, and they were not aware of it until they were gone, is that the thing that happened? Or do you know?

Mr. RASK. I am not able to answer the question.

Mr. FJARE. That's 4 in 1 day; was that accident in one particular given spot in the mine, I assume?

Mr. RASK. I am not able to answer the question.

VOICE. I can answer that question, if you want.

Mr. METCALF. I would like to have it. Would you give your name for the record so that we know?

Mr. RENOUARD. Ed Renouard.

Mr. METCALF. Now, if you can answer Congressman Fjare's question, we would be glad to have it.

Mr. RENOUARD. All right. These four men were working in the Anaconda mine on night shift. They were coming off shift and they were walking out this drift. Just what happened we do not know, but the four men were found dead, lying on the track, one after the other in sequence, as though they had just dropped, and we felt that it was a deficiency of oxygen, whatever moved in with them, that there was insufficient oxygen for them and all four died. With them was the shift boss and the other three men had been working on drilling some drain holes for putting water down into a gob for leaching purposes.

Mr. FJARE. And you feel that it was the lack of oxygen, perhaps, rather than the presence of some deadly gas, such as carbon monoxide which would sneak up on them unawares?

Mr. RENOUARD. Well, it was something like that. The men died of insufficient oxygen. Incidentally, the men were working in an area that had bad air in it, and in that particular area fans had been installed, and the men were working at the end of the fan bag installation, similar to what you have seen in your travels the last few days, that was in their working place. They had worked a full shift and were on their way out through an area where there had been no gas, they were out through and beyond where the gas area was, and, whatever came in, or whatever happened, we have never been able to solve. That's as much as I know about it.

Mr. METCALF. Thank you very much.

Mr. ELLIOTT. Since looking closer, I see that here in 1943 (see p. 120) on July the 25th, at the Leonard Mine, you had 3 deaths by a fall of ground; but, still, I believe, I haven't seen a single instance where there were as many as five killed at one time, such as the type accident that we sometime have in the coal mines. Well, now, I saw on your helmet yesterday, Mr. Rask, when we were in the mines, a pin that said you were on the safety committee. Does that mean that you meet once a week with management and with the other people on the safety committee of the union and you discuss these safety conditions in these various mines or however often you do meet?

Mr. RASK. Let me say this: That button in my hat was from 2 years ago when I was on the safety committee at the Anselmo mine before I went into office at the Butte miners union.

Mr. ELLIOTT. You are not on the committee any more?

Mr. RASK. I, as an officer of the miner's union, I am on all committees, and therefore, if safety problems can't be worked out between management of the mine and our safety committee at the mine, they are brought to the union and there the officers of the union take them on to the higher heads of the company.

Mr. ELLIOTT. Well, I want to ask you this as an expert, because you've been probably in this setup of joint management-union committee since it originated here: Has that system of providing safety been what you would call a good one, and has it meant a great deal to the improvement of safety conditions or has it been a system that nobody pays much attention to on either side?

Mr. RASK. Let me say this: In the past we have had some trouble getting the committee, and possibly management, to work at this safety—I mean to work at it very strongly—but since negotiations of July of this year we seem to have more cooperation from the company and also the committees, and only time will tell if these safety meetings and reports that are handed in will help in preventing some of these mine accidents.

Mr. ELLIOTT. Well, if John Doe comes out of the mines and comes up to the safety committee and says, "There is a condition that I have observed in the mines that I think is hazardous," and you meet a couple of days later that week with management, and then you say that such-and-such is the condition here, do you generally get action from management or from both union and management to clear up the particular thing which John Doe has found in the mines that perhaps nobody else is aware of?

Mr. RASK. The reports of our committees are this: You see, we have meetings of our safety and grievance committees once a month; the reports that they bring into the union are that they have been getting good cooperation in regards to the safety hazards that they have brought in to them.

Mr. ELLIOTT. That's all; thank you.

Mr. FJARE. I have one more question: Would you give me a specific example of what your committee might discover in the mines that they would like to have corrected? I am thinking perhaps of one myself. This morning, as I was going down through those tunnels, I noticed one of these big, long—I always call them shoring bolts that you bolt those walls together with—sticking out, the very end of it, that came awful close to my head. Now, perhaps, if I worked in that mine, I would like to have that thing removed; in fact, I really would like it moved because I almost banged my head; now, would that be an example—if you noticed that thing sticking out there, which could very easily strike someone's head or shoulder or neck or something and injure them, do you immediately as such report that to someone?

Mr. RASK. If our committees or anyone in the mine——

Mr. FJARE. The individual? That's what I am getting at?

Mr. RASK. Any individual can report that to our committees——

Mr. FJARE. All right.

Mr. RASK. Who will take them to management?

Mr. FJARE. Now, will you give me some specific examples of what miners most commonly complain about as hazards?

Mr. RASK. Well, there is——

Mr. FJARE. Now, I am talking about accident hazards. I am not talking about silicosis or something——

Mr. RASK. Yes; I know.

Mr. FJARE. But something you could injure yourself on in the mines.

Mr. RASK. There are many things that they possibly could bring to management. If you remember this morning going through drifts that we have gone through to get to these different stopes, I noticed myself that on one of the walls on the way in it had a big slab—a big crack in it—which we call a "slab." Our motor—our men are walking through those areas at all times; our motormen are running through those areas at all times. Those are some of the things that we report.

I know, going through the Mountain Con mine this morning, that things were pretty well cleaned up through the areas that we went through. Now, some mines and some places, the areas are cluttered quite often, which makes it difficult for our people to pass through when motors are going by, and things of that sort they have to report.

Oh, there's possibly many others that I could report, but I'm a little excited up here and I can't think of any.

Mr. FJARE. Are you suggesting that we saw the showpiece of the mines in our tour, or is it——

Mr. RASK. I will say this: That the areas that we went through looked pretty good to me. From my experience in the mines, I can't say that it's like that all over.

Mr. FJARE. Well, that was above average, you would say?

Mr. RASK. Yes.

Mr. FJARE. That's all I have.

Mr. METCALF. That's all.

Thank you very much, Mr. Rask.

STATEMENT OF GLEN ZORN, EX-MINER, DISABLED, FORMERLY EMPLOYED BY ANACONDA CO., GREAT FALLS AND BUTTE, MONT.

Mr. Zorn? I want to especially welcome Mr. Zorn, whom I have known for many, many years, and who is to testify before us. Have you a prepared statement, Glen?

Mr. ZORN. No; I haven't.

Mr. METCALF. Well, will you, then, identify yourself and your official position and the reason you are testifying, and you just proceed in any way that is most convenient for you.

Mr. ZORN. My name is Glen Zorn. I am an ex-miner, disabled at the present time.

I first went to work for the mining and smelting industry in 1926 with the Anaconda Co. in the smelters in Great Falls.

In 1929 I went to work in the Butte mines here in Butte and I have worked most of the time since then here in the Butte mines.

I have been injured quite seriously several times, once in 1930 and once again in 1944, and again in 1949.

I have had numerous X-rays taken to check on dust conditions in my lungs. The first, I think, about 1936 when there was no dust showing on my lungs. Then again, 2 or 3 years later, and again there was no dust showing on my lungs. In 1943, I had X-rays and I was told that there was some dust showing on my lungs. In 1946, I contracted pneumonia, and while I was in the hospital, the doctor advised my wife at that time that it would be a good idea for me to get out of the mines.

I then had X-rays taken after I got out of the hospital, 3 of them in 1 week, and I was told by the T. B. association here in Butte that I should be going to Galen. However, I didn't go because I had a family to support, and the $30 per month silicosis pension which was in effect at that time certainly wouldn't support a family; so I left Butte for about 20 months and went to work over in Washington and later on came back to Butte and went to work in the mines again—chiefly because I couldn't find anything else to do.

After my injury in 1949 I was off from work for 31 months. I had an examination again in Galen and I was considered as being a third-degree silicotic and put on the silicosis compensation at that time.

I was on silicosis compensation for about 13 months and then went back to work in the mines, because I ran out of money and you have to have money to buy food and clothing.

I then worked from that time until the beginning of 1954, when I was elected president of the Butte Miners' Union, and I was out of the mines about 11 months then, and went back to work again after leaving that office; I went back to work in the mines and worked until June of 1955, when I got a heart condition along with the silicosis and spent considerable time in the hospital, and I haven't worked since.

I'm more interested in the silocotic condition than in anything else for the purpose of this hearing.

Even though there are a lot of people killed and a lot of them injured—where they are laid up for years and some of them permanently—but the silicosis condition in Montana, I think, is bad, and it certainly needs some attention.

I feel that probably the greatest problem and the problem that creates the greatest amount of dust for the workers in Butte is the practice of blasting during the shifts while the workers are underground. There just isn't any place where they can go to get away from the dust; consequently, when that air is polluted with dust, high in silica content, that's where they get their silicosis condition in the first place.

Silicosis is a disease, as I am sure that you gentlemen are aware of, that—it isn't curable. Once you get it you've got it, and so far, at least as far as I know, no doctor has ever found a method of curing it.

It not only stays with the person until he dies, but it invites other contributing diseases to enter into the body.

One of the reasons why so many silicotics die from tuberculosis and also from heart trouble is due to the condition of the lungs caused by the injury that has been done by the silica dust.

Now, there are quite a number of doctors in the world, and the number, I might say, is increasing steadily, who in this day and age have a different conception of how the damage is actually created by the silica in the human being's lungs and in the lung tissues, and, according to this theory, the lung isn't only injured by the tiny particles of silica dust entering the lung tissues—cutting a hole into the lung tissues—but it is also caused by the silica particle oxidizing and creating a silicic acid. Minute particles or amounts of silicic acid, day after day and month after month, tend to burn or scald the lung tissues, and it is in this—this lung tissue that has been injured—where it gives

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the germs, such as tuberculosis, lung cancer, an opportunity to enter the lungs, and after the germs have entered the lungs it is almost impossible for a doctor—and these statements by doctors—to cure that tubercular condition because of the condition of the lung tissue itself.

In many places now, where a person has tuberculosis along with an otherwise undamaged lung, doctors now operate, perform surgery, take out the diseased part of the lung.

I've talked to a good many doctors, and they say that it would be suicide to operate on a silicotic's lungs. The silicotic hasn't enough lung capacity to properly oxygenate the blood supply for the human body as it is, and if they were to operate and take out an additional part of that lung they might as well cut his throat, because he would just die anyway.

Now, that's the possibilities that the person has who contracts silicosis, and there are a lot of them, as has been pointed out here from the various records today. There are a considerable number in addition to that who have silicosis, but because of the fact that they have families to support many of them who should be in hospitals get jobs such as watchman on the hill and various other types of work because they can't support their families on the $65 a month they'd draw if they were to go on silicosis compensation.

In the Butte mines there are several factors in addition to the noontime blasting which causes excessive amounts of silica dust.

One of them is the temperatures which has the tendency, in many of the mines, at least, the high temperature has a tendency to dry out the dust and then it is necessary to have ventilation in order to cool those places off and forced air is used. Forced air, I am sure you realize, does one thing principally so far as the dust is concerned—it stirs it up and keeps it in motion in the air.

I feel, personally, that if some method were devised of using suction fans to capture the dust-laden air and to filterate that—precipitate that dust out of the air and clean the air, it would eliminate a lot of dust.

I think that it is necessary that the Federal Government take some steps, along the lines that have been stated here today, to set up an inspection law which would enable the Federal Government to inspect the mines, to work out proposals and ideas for eliminating the dust and for the prevention of silicosis.

Since there is no cure for it, the only solution for the human beings who are working in the mines is to prevent the silicotic condition.

I think that if the Federal Government entered into this problem, the Federal Government would set up laboratories with medical and scientific research laboratories that a method could be found.

Possibly not next year or possibly not in 5 years, but I am sure in time a method could be found which would prevent the overwhelming majority of the silicotic conditions cases.

I don't believe it is possible to do that in any other way except by the Federal Government taking over this job; and it is a job that needs to be done and should be done.

In addition to that I think that a law is necessary; and again I think it is the duty of the Federal Government to do this job; and that a law is necessary which will compensate the disabled workers, which will provide a decent standard of living for the disabled worker

and his family. Certainly $65 a month is not the solution, and certainly the solution is not in having a worker find some job that he can, that will enable him to bring in a little bread and butter as long as he is able to drive his body around to do it.

In my opinion, when a man is seriously ill with an incurable disease he should have an income which would provide his family with a decent standard of living so that he can spend what remaining time he has left without worrying day and night about what his children or his wife are going to do for something to eat.

That's about all I have to say at this time.

Mr. METCALF. Thank you, Mr. Zorn.

Mr. Elliott?

Mr. ELLIOTT. Don't you think the matter of compensation for the silicotic, which you mentioned last in your testimony here, is one, however, for the States rather than for the Federal Government, as that is a field that the Federal Government has not entered so far as I know at any time; the States usually have done or always have done the legislating in the field of workmen's compensation, such as you mentioned?

Mr. ZORN. No.

Mr. ELLIOTT. But you feel like that is a field that the Federal Government ought to go into?

Mr. ZORN. I feel it is for this reason: That in Montana, in a number of instances, the miners unions here in Montana, particularly, have introduced legislation in the State legislature to take care of the problem, and the opponents of this legislation have always taken the position that the burden of supporting silicotics should not be on the State level because of the fact that so many miners migrate around all over the western part of the United States—and in many cases all over the United States—from one State to another; and that the silicotic victim may have contracted the major portion of his silicotic condition in another State; and in view of that there is only one thing to do—or two things to do with it, rather:

One of them is to have Federal legislation or the other one is to have State laws take care of it which will automatically put the people who have worked in several States in the ashcan, because they haven't any place to go.

Mr. ELLIOTT. Now, secondly, I want to ask you this question: Have you seen in the mines recently the filtering machines they have to filter dust out of the air?

Mr. ZORN. No; I haven't seen any of them.

Mr. ELLIOTT. We looked yesterday at several of them. I am not enough of a scientist to be able to properly describe them, maybe, but we had some that gave the impression of doing a rather efficient job of filtering dust out of the air that circulates in the mines. I think they are rather a new development, however.

Mr. ZORN. Well, I think, of course, as I stated before, I haven't worked in the mines for about 15 months, but when I last worked in the mines there were only 2 mines in Butte where those filtering machines were installed—one was the Kelley and the other was the Mountain Consolidated. In the mine where I worked, after I left the union office, until I became ill, there were no filtering machines.

Mr. ELLIOTT. Which mine was that?

Mr. ZORN. Well, that was the Belmont.

Mr. ELLIOTT. The Belmont. That's all, Mr. Chairman.

Mr. METCALF. Mr. Fjare.

Mr. FJARE. I gather from your testimony, Mr. Zorn, that you feel the Federal Government could go further and more rapidly in correcting hazards of dust in mines than normal negotiations between employees and employers; is that correct?

Mr. ZORN. Well, as far as normal negotiations between the employer and the union, for instance—if that's what you mean.

Mr. FJARE. Well, I am assuming from your testimony you indicated that it was desirable, at least on your part, that the Federal Government enact legislation which would enter the Federal Government into the field of research, scientific research, to eventually arrive at a point where you feel that mines could be dust free, and so forth, and thus eliminate silicosis.

Do you feel that there has been a definite lack of interest on the part of the Anaconda Co. or the mining industry as a whole, to move forward rapidly in this field of eliminating dust and providing ventilation and air conditioning in the safety provisions? Do you think that? If you feel that way——

Mr. ZORN. Well, I would like to say this: I feel that not as much has been done as should have been done in eliminating the dust.

I also feel, with all the experience I've had in the mines, that so far as eliminating the dust completely in the mines is concerned, I don't think it's possible.

Mr. FJARE. All right.

Mr. ZORN. That's the way I feel, and, in this respect, I don't believe that it is possible for any mining company to do a proper job——

Mr. FJARE. Do you think that the Federal Government could?

Mr. ZORN. In setting up research laboratories with medical people and scientists to study the—not only the problem of why you have dust underground—I think most of us know why we have dusts underground—but I think it is necessary to study the problem with scientists and medical people from the point of view of finding something that might counteract the effects in the human body of the silica dust. Laboratories and scientists and doctors are spending a great deal of time and money and energy in studying countless diseases, to find out why these diseases occur and what makes them tick, in other words; and, as far as I know, this is not being done in the case of silicosis in the United States. I think it should be done, but I don't believe that any mining company is in a position to set up a laboratory—which might cost a million dollars a year to operate—to study these things; and I think that if the Federal Government does it it won't only benefit the people in Montana but it will benefit the people from one end of this Nation to the other.

Mr. FJARE. Now, I understand what you are getting at; and, to a certain degree, I certainly agree with you. Now, would you put into this law a compulsion that every mine that operates stick to a given set of equipment before it operates and opens, or can operate; or would you make this—these benefits available by the Federal Government the choice of company, or would you insist that no mine operate unless it has certain amounts of specific standard equipment?

Mr. ZORN. I think that, to a degree—to a degree that, as I understand it, is true in the coal-mining laws, and I am sure that the same

thing would be practicable in the metal mines—that certain standards would have to be lived up to.

Then, again, I think that there are other things that are necessary—and there, again, research is needed to do the job. For instance, I heard some questions asked this morning in regard to the permissible amounts of particles of dust in the air—well, to me, that's not a very sound solution, as a person might go into a flour mill and there could be 10 times the amount of dust particles in the air that would be permissible for an underground mine, but the worker would never contract silicosis in there because the dust particles don't have any silicosis in them.

I think in order to properly handle the problem, the amount of dust in the air should be considered on the basis of how much silica is in those dust particles. A dust particle without silica can't do any damage, but a dust particle with silica can do a lot of damage, and if that dust particle is all silica it does a great deal more damage.

Mr. FJARE. One more question: In your recommendation for Federal legislation providing compensation to disabled, would this legislation to which you are particularly referring be specifically to the mining industry, or would you include all industrial accidents of all industrially disabled people as being under a compensation system on a Federal level?

Mr. ZORN. What I had in mind was chiefly in connection with silicosis problems.

Mr. FJARE. Not the injured?

Mr. ZORN. No; not the injured.

Mr. FJARE. Why? I mean, a man who has lost two legs is a——

Mr. ZORN. In the first place, we have legislation governing the compensation, insofar as the disabled from accidents are concerned, in Montana, and I believe they have in every other State in the Nation. It's mostly a——

Mr. FJARE. But you would have it include silicosis, no matter how he contracted it; is that right?

Mr. ZORN. How's that?

Mr. FJARE. You would have it include any silicotic, no matter where he contracted it, whether it was in the mining industry or from some other sources?

Mr. ZORN. I think that it is the only possible way that it can be handled for the hundreds of workers who migrate from one State to another; and there is no way of determining where that worker contracted the silicosis or where he contracted the major part of the silicosis.

Mr. FJARE. Now, do you recommend that the compensation be by the Federal Government rather than by the States for the reason which you mentioned, or do you think the industry should be involved in compensating?

Mr. ZORN. Well, again it seems to me that in view of past experiences and all of the objections of the employers and the gentlemen in industry in Montana that they shouldn't be taxed for those people who have contracted the silicosis elsewhere, I don't see how those hundreds of people who do contract it in other States or who can't tell where they contracted it, to keep them from not getting any compensation.

Mr. FJARE. That is all.

Mr. ELLIOTT. Does the State of Montana allow compensation—workmen's compensation for silicosis?

Mr. ZORN. No.

Mr. ELLIOTT. I yield.

Mr. METCALF. Thank you very much, Mr. Zorn, for what I think is very helpful, informative testimony.

Mr. ZORN. Thank you.

Mr. METCALF. The next witness is Mr. Alfred Giesek, of the Butte Miners Union.

STATEMENT OF ALFRED GIESEK, BUTTE MINERS UNION, BUTTE, MONT.

We are glad to have you with us, Mr. Giesek, and I see you don't have a prepared statement?

Mr. GISESEK. I wish to apologize to the members of the committee——

Mr. METCALF. It is quite all right.

Mr. GIESEK. But I have been unable to master the fine art of Braille sufficient to make notes.

Mr. METCALF. We have very competent reporters who can take your statement down and we will be very glad to have you give it in your own way. Just start off and proceed in any way to tell us what you want to tell us.

Mr. GIESEK. I have mined for over 30 years. About 16 years of that mining time was spent in the mines of Butte; the remainder I have mined in various different States.

I have mined gold, lead, zinc, quarried travertine, gypsum—I have got around to everything but the salt mines—I never ran into that; and I feel that from the various experiences of the mining I had that I would be greatly in favor of the Federal legislation on the silicosis, for one thing, and the Federal mine inspectors, for another, and also the other things that I noted from questions there that were answered. I don't recall them now, though, but I—

Ah, yes; there was one on the question of whether the incentive work has a tendency to create more accidents. I believe it certainly does; however, I don't know whether legislation could abolish that contract speedup work. I believe that is more of a matter of negotiations.

However, I note that there is a coal miner amongst the committee, and I want to point out that the coal miners have abolished the incentive system and I haven't been able to study just how good it come out, but, evidently, it was—the companies are making pretty good money yet, and I am pretty sure that the miners are putting out a good day's work; and, incidentally, I know that the accident rate must be less; so, I believe that that would be one good thing—that we could abolish the contract system.

I contracted all my life. I liked it, personally, but I say it does have a tendency to allow people to get hurt; and, for an example, that rock bolt you run into this morning—now, there is a case where a contractor was paid to install it at a given price, and the immediate boss on the beat was probably not paying too close attention and failed to make the contractor comply with the complete installation of that

bolt; so, in the course of time, well, it was overlooked and the contractor was paid for that work; and, naturally, later on the other men were in a position where they were forced to walk by there and the bolt became obstructive.

Well, the boss can't go and tell that miner: "You go and saw that bolt off over in that other place where you have been working a couple of months ago." It is just that guy's way, he will say: "I don't know what's there, and I am not going to do it, unless you pay me for it again."

Well, the boss, then, he is reluctant to send a day's-pay man over there to do work over again that has already been paid for, and the result is that there is a lot of that sort of things going on.

As far as the difference of the men being killed in Butte and in other camps, there are various reasons, of course. One might be that in some mines such as I know of in Colorado, the ground was much firmer and there was less injuries or fatalities by the falling of ground.

On the other hand, there was ground that I mined in Arizona, for example, for the Phelps-Dodge Corp., they had similar ground to here, to that here in Butte, in a lot of instances, but it seemed that they weren't so skimpy on timber.

I think in recent years the company has been trying to do a lot of mining with as little timber as possible, and I think sometimes that—although there are places here that are very comparatively safe without timber—like I am pretty sure you noticed at the Kelley mine, that is a pretty hard piece of ground there, and I know you couldn't see where you would get hurt there—unless you went up into the upper levels—I don't know just what portion of it you went—but the use of these here rock bolts—I forget what the Congressman called it—what do you call them down in Alabama?

Mr. ELLIOTT. Roof bolts, we call them, roof bolts.

Mr. GIESEK. Well, we call them rock bolts here, I think that's an official name for them and that's what the miners call them. They are all right in places, but there are portions of this hill here where they are very ineffective and they try over and over again to use them, and then, eventually, sometimes have to go back and install timbers; and there is where I think these safety committees can do a lot of good.

Personally, I know the safety committees are a good start toward safer conditions, but I still feel, and I think I have expressed it on the negotiations committee, I feel that there isn't enough leeway for the mine committee.

For example, when you compare with the coal-mine pit committees and when I served on a pit committee, when the miner had a problem—a safety problem or a discharge problem—we had, as I recall, both a safety and a grievance committee alone—one and the same; and, of course, I was contracting but the foreman immediately would come to the place and said: "Al, I have a grievance. Come on"; and he looked at his watch and away I went right away, and we went over the problem and I gave my verdict; and, incidentally, I ruled in the foreman's favor—the miner happened to be in the wrong—and I told him that he could appeal my decision to union; and then I went back to my working place with the foreman and he looked at his watch again, and it was about an hour's time that

we had consumed, so he said: "I will pay you 2 hours days' pay for this."

Or, if we had a grievance before shift or after shift, the company paid us that time, but here we have been unable to get the company to pay our men for time lost while they are looking after grievances, and certainly a lot of the fellows want to rush away from them, and they are not going to spend too much time looking for bad spots when they haven't got time to run around.

I think that if we could get that kind of a deal some day—of course, that is a matter of negotiations—but it is a point that would help.

There is one other point that I wanted to point out there—oh, you ask me something.

Mr. METCALF. Mr. Giesek, before I turn you over to Congressman Elliott, I want to tell you that he is not a coal miner.

Mr. GIESEK. Well, I assumed that he was from a coal-mining State.

Mr. METCALF. He certainly is. He is from Alabama and he represents one of the large coal-mining areas of that State.

Mr. GIESEK. That's right, and they use the rock bolts there in the coal mines.

Mr. METCALF. My experience with him during the past 4 years has been that whenever any interests of the coal miners or the coal interests are involved, he's always up there defending the coal miners and their operations, but I don't know whether he has ever mined any more coal than he has mined copper—and that was very little I assure you.

Do you have any questions, Congressman Elliott?

Mr. ELLIOTT. No, except to say to Mr. Giesek that I have enjoyed his testimony very much and I think he has given us some worthwhile ideas.

Mr. GIESEK. Well, I thought maybe I could answer some questions, but if you don't have any——

Mr. METCALF. Just a minute, now, maybe Congressman Fjare has some questions.

Mr. GIESEK. Yes. He was asking some very fine ones here awhile back.

Mr. FJARE. Mr. Giesek, I would like to know how you became injured.

Mr. GIESEK. Sir?

Mr. FJARE. How did you become injured? Or did you? Were you injured in the mines?

Mr. GIESEK. Oh, you want to know how I got blasted—Oh, yes, I got blasted at the Leonard mine on April 11. Yes. I was on a contract, too, by the way, on the day I got blasted. I contracted on the day I got blasted and then I quit. I am unemployed now and disabled.

Mr. FJARE. It was the blasting accident that blinded you; is that correct?

Mr. GIESEK. Yes. Oh, yes; and I am glad you asked that question; I wanted to point out another thing concerning that—not because I got blasted—but I know that while I worked for Phelps Dodge, and this was many years ago, incidentally, I believe it was around the thirties—before the hungry thirties—there all the blasting was electric; and I want to emphasize to this committee that I would like to see a law passed that all mines—all the metal mines—would be forced to use electric blasting, because the other method is a very

outmoded and dangerous method and because many a time—of course, now, there can be missed holes in electric, also, if the juice is not properly contacted—but there is less danger of missed holes in the electric type of shot—but any time that there is more than one shift of miners working in one given place, there's always an opportunity of one hole or another not exploding and this hole can always squeeze up that hole to such an extent that it is invisible to the miner, and then when you start drilling, why, you are in that hole again and you blow yourself up.

Mr. FJARE. Now, you are talking about regular—I suppose you call it fuse blasting, is that correct?

Mr. GIESEK. Yes, that's fuse blasting. That's what the Anaconda uses exclusively with the exception of shafts or wet drifts. They use that. And I know that Phelps-Dodge had electric blasting in everything—even the chute blasting was done by electricity, and it was very safe, and it creates less dust, I think, because they go off faster; and another thing it cuts out a lot of that walking through smoke and dust. In other words, it is a more healthful situation by using electric blasting.

Mr. FJARE. Well, maybe it is just starting to develop, but we were shown electric blasting equipment this morning that they use. Is that something that is just coming in new there?

Mr. GIESEK. Now, just a minute there. Where were you shown it—at the Kelley mine?

Mr. FJARE. No, this was at the Mountain Con.

Mr. GIESEK. At the Mountain Con—was it used in the stopes?

Mr. FJARE. That's where they said it was. That's what they told us it was being used.

Mr. GIESEK. That pinpointing blasting or split-second blasting they have up there?

Mr. FJARE. Well, they explained it as split-second and so forth—electric blasting.

Mr. GIESEK. Well, that's right.

Mr. FJARE. That's what you recommend? Is that correct?

Mr. GIESEK. Well, not that type, necessarily, because I mean it is similar to that, of course, but probably that split-second timing is O. K. but for other type of mining like raises and drifts, I prefer the delays in order to allow the holes their separate course of explosions.

Mr. FJARE. You made a rather emphatic mention of rock bolts?

Mr. GIESEK. Uh-huh.

Mr. FJARE. Do you think that the use of rock bolts, or did I gather from your testimony that you believe the use of rock bolts is inferior to normal timbering procedures?

Mr. GIESEK. Oh, yes. Definitely, in certain parts of the ground. For example, say that you insert an 8-foot rock bolt, and the seams and streaks running through the ground here, there is apt to be, maybe you are drilling through a hard portion of the ground, and it's still fairly firm, but there is a little seam and it may be that dissolving-kind of rock when the water hits it or the air hits it after you drill that hole, and you insert your rock bolt, and the thing might come loose, you know.

Mr. FJARE. Well, I am glad that you give us this technical information. However, it is not particularly necessary, but I would like to

know this: Does your union object to, and if they do, have they made it known to the company that they do not prefer or recommend or want rock-bolting operations?

Mr. GIESEK. Well, the union certainly would prefer timber. However, they are not going to object to the using of rockbolts where the ground is fairly in condition to use them.

Mr. FJARE. All right, now, when they go into an area where it is not proper or not good in the union's opinion or the grievance committee's—let's put it that way—do you let that fact be known?

Mr. GIESEK. That's right.

Mr. FJARE. To management?

Mr. GIESEK. Yes, they do.

Mr. FJARE. What does management do?

Mr. GIESEK. A miner usually may desire timber in this particular place. He knows it's unsafe, and rather than to create any disturbance, he would rather quit and go away from there, or he might be shown that he doesn't know enough about the ground there, but if they had good experienced inspectors—these Federal inspectors to look the ground over, they certainly would know whether the given area of the mine was correct for using rockbolts or timber. That would help it a lot right there, that's a pretty good instance.

But certainly up at the Kelley there—up in that hard ground there—you don't need no rockbolts. I think they are just there to look pretty sometimes—of course, there is other spots that they need them.

Mr. FJARE. That's all that I have.

Mr. METCALF. Mr. Elliott.

Mr. ELLIOTT. One question, Mr. Giesek: Does electric blasting guarantee the explosion of all charges of the powder or whatever explosive might be used?

Mr. GIESEK. Not necessary, but if they are wired properly and have sufficient amount of juice, they very rarely have a miss hole—where in the fuse blasting, although the fuses and the exploding cap itself are much improved over the past 10 or 15 years—yet they are still subject to miss holes many times.

Sometimes, for example, a miner has trouble lighting them—well, if he doesn't light them, they certainly are not going to explode; but the electric is—you wire them all together and they are bound to all get the charge, and for that reason you will very rarely have a miss hole.

Mr. ELLIOTT. The point that you are making is that electric blasting is much more efficient and much safer than the fuse blasting?

Mr. GIESEK. That's right, but it costs a little more is all. It's a little more expensive.

Mr. ELLIOTT. That's all.

Mr. METCALF. Well, that's all, and thank you very much for your testimony and it has been very helpful.

I want to say to Mr. Renouard and Mr. Bigley, who conducted us on our tour of the mines, that I wish they would put one of those ventilating machines, one of those air-conditioning machines in the courthouse in this courtroom. We need it here, too.

The next witness is Tom Dickson, president of the Anaconda Mine-Mill and Smeltermen's Union. Mr. Dickson.

We are especially glad to have you with us, Mr. Dickson. You are from Anaconda, and I imagine you are going to talk about the smelter, so you just go right ahead.

STATEMENT OF TOM DICKSON, PRESIDENT, LOCAL NO. 177, INTERNATIONAL MINE-MILL AND SMELTER WORKERS IN ANACONDA

Mr. DICKSON. My name is Tom Dickson. I am president of the Local No. 117 of the International Mine-Mill and Smelter Workers in Anaconda, and I have been employed currently for 16 years at the smelter.

I have worked in a number of the departments in the smelter, and I would like to mention, generally, some of the conditions at the smelter.

Mr. Salvas testified regarding lung cancer as being attributable to arsenic. I personally knew, in the last year, 5 men who had this condition—3 of them are now dead.

We have some silicosis in connection with the brickyard and the ore crushers up there.

The arsenic, of course, is in connection with the smoke which is in the process of smelting, and it is precipitated out of the smoke into the flue and then into the treaters. Men working in those departments normally receive burns as well as poisoning from the arsenic; and it is a standing joke at the smelter that the arsenic is not poison until such time as they put it in the cars and load it for shipment—at which time they put a big sign on the car—poison; but up until that point it is perfectly safe.

There are also many types of gases around the hill. For instance, in the production of sulfuric acid there are gases produced there, including hydrogen sulfide, which is a cumulative poison that builds up in the system, and eventually gets you.

As far as the silicotics are concerned, I know personally of three; and in very few cases of where the man has died of silicosis is the death listed as from silicosis—it is always from some other cause.

In the zinc plant the men, generally, are exposed to acid fumes and, of course, to heavy-metal poisoning from the zinc, also from the lead, and one which Mr. Salvas did not mention—which is a new condition at the smelter—is manganese. I know of only one case of manganese poisoning so far; and, as a matter of fact, very little is known, generally, of manganese poisoning, although it has been known throughout somewhere in South America they have suffered from it. I know, personally, of only one case that we have had on the hill.

The gas and dust in many of the departments in the mill and in the ore crushing and the roaster department where we calcine, which also contains arsenic, by the way; as a matter of fact, the arsenic is prevalent throughout the hill on account of the wind blowing it, and the men who work in that department are paid a premium pay due to the conditions under which they work.

That, generally, is about the situation there from heavy-metal poisoning, gas and smoke and dust and, of course, the lung cancer, which is something that I think that should be straightened out. As I understand it, there are very few cases of death from TB down at the State sanitarium for TB, most of them are lung cancer, and that's about the size of it. I would be happy to have you ask me any questions you desire.

Mr. METCALF. That completes your statement, Mr. Dickson?

Mr. DICKSON. Yes, sir.

Mr. METCALF. Mr. Fjare.

Mr. FJARE. Well, just one quick one: Is the company, in your opinion, making any steps toward solving the problems which you've related here? Are they installing equipment to lessen the hazards?

Mr. DICKSON. I am glad you mentioned that. I would like to say further that regular safety meetings are held between management and the employees to resolve a number of the safety conditions; and a few years ago a department of health and sanitation was put in, and, I understand, they were largely instrumental in almost completely eliminating the fluorine which used to be present in the zinc dross. Flourine, of course, is used to etch glass, and heavens knows what it does to a man's interior; but they have largely eliminated that. I understand there is a very small percentage of it now.

Mr. FJARE. Are they working on all phases?

Mr. DICKSON. Yes; they are working. That's quite true. The health and sanitation department has a tremendous job to do, because of these conditions; and, I understand also, that they are working down in the ferromanganese department in an attempt to eliminate the dust from those people.

Mr. FJARE. Do you think the Federal Government, by enacting laws, could do it better and faster?

Mr. DICKSON. Well, frankly, I don't know how rapidly the Federal Government moves, but I am suspicious——

Mr. FJARE. Well, that's the reason I asked the question, because I know.

Mr. DICKSON. I do believe that possibly some study should be made on some of these industrial diseases so that if we are better acquainted with them, we can certainly and the rest of the companies can take measures to eliminate them. This, I believe, should be done.

Mr. FJARE. That's all I have, Mr. Chairman.

Mr. METCALF. Perhaps there should be some Federal research into ways of preventing some of these diseases? Do you think that all is being done that could be done down there in the smelters to take care of it?

Mr. DICKSON. Well, frankly, no, but naturally that's to be expected, because as an employee I think a lot more should be done. Of course, management has other ideas, they think they are doing as much as they can, and we think they should do more, but this is a normal condition.

Mr. METCALF. Well, I understand if it is a normal condition that if there are certain unavoidable hazards that have to be met, however, if some of these hazards are not unavoidable, if the company or a research would develop a way of meeting the arsenic that causes lung cancer or some of the other gases and taking it out of the air. Have you ever worked in any other smelter?

Mr. DICKSON. No; I haven't.

Mr. METCALF. These special hazards that occur down at the Anaconda smelter are in addition to the ordinary hazards of working around any machinery or any of the other things there?

Mr. DICKSON. That's quite true. There are industrial accidents, of course. Somebody gets his head stuck in a crusher or something of that type, but those are normal accidents, and the company does make

every effort where an accident—where an unsafe condition exists to eliminate it, but so far as the industrial hazard is concerned from gas and dust and so forth, those are things that take more than just a safety program.

Mr. METCALF. Will you tell the committee what the situation is with compensation under the industrial accident law for diseases or hazards as the result of gas and acid fumes and manganese and arsenic?

Mr. DICKSON. There is none. As a matter of fact, the company does not recognize arsenic as an industrial disease. The company doctors, unfortunately, treat all of these skin conditions as dermatitis, and undoubtedly it is dermatitis, because the man is damned well burned with it; but these are all called dermatitis and there is no compensation for any of these diseases, nor for any of the burns, copper sores, whatever the man might get.

Particularly in the zinc plant, there is a condition where high erosion occurs on the enamel of the teeth. This, of course, is not compensable either. You get a set of china clippers and that's it.

Mr. METCALF. Now, you mentioned that people get burned with acid and the doctors call it dermatitis?

Mr. DICKSON. That's correct.

Mr. FJARE. Aren't there adequate provisions made to prevent that? Now, undoubtedly, they are not adequate if it happens——

Mr. DICKSON. That's right.

Mr. FJARE. But would you say it's the fault of the company not providing adequate safeguards or is it primarily because of human error or carelessness?

Mr. DICKSON. Well, no, I wouldn't say it is human error and carelessness, and I'm glad you mentioned the providing equipment—because the company does do that.

Mr. FJARE. It does?

Mr. DICKSON. The company provides facilities for the men to take care of themselves and the men do this, but even in spite of that—even in spite of that—I, myself, was poisoned with arsenic a good many years ago. My own mother would not have recognized me going in with this outfit, I was so covered up, but in spite of that I developed some internal poisoning from arsenic.

Mr. ELLIOTT. In spite of that you did what? I didn't understand you.

Mr. DICKSON. I developed arsenic poisoning. As a matter of fact, I gained 25 pounds in a month and a half. I was never so heavy in my life, before or since.

Mr. FJARE. Well, your accident—the accident which you are referring to, was it, in your opinion, your own fault, or was it lack of adequate protection?

Mr. DICKSON. No, this was just because of the condition under which I worked. I protected myself so far as I was able to do so, to the extent of everything that was furnished to me. I had a muzzle, I had a woolen hood, I had goggles, I had everything covered—my own mother wouldn't have recognized me going in there the way I was covered up—but in spite of that, I still got that in my system. This is something you can't avoid.

Mr. FJARE. Has that condition under which you were exposed at that time been corrected today?

Mr. DICKSON. Yes. I mean they don't do this any more.

Mr. FJARE. I am sure you understand that for us sitting on this committee, as such, are Members of Congress who are charged with the responsibility of drafting legislation should it be desired, and you must understand we have to take into consideration the human error that is always going to exist. Now, there's a few things you can't legislate—morals being one, and human characteristics another. Now, one man is careful where another man is not and no Federal law or any law, anywhere, is going to correct that, but that's what we try to separate in these hearings. In other words, at least for myself, and I am sure my colleagues agree, that we are trying to separate those things which we can do something about from those things which we cannot, and some of our questions may or may not sound logical, but that's the purpose of them, at least.

Mr. DICKSON. Well, I would like to say that the employees recognize the hazards and the company makes every effort to provide them with the equipment to avoid these hazards, but in spite of that, these things still happen.

Mr. METCALF. Well, I want to thank you, Mr. Dickson, for coming down here from Anaconda and giving us some information about an occupational hazard that we hadn't had any study about before, and, on behalf of my two colleagues on the committee, thank you for your testimony.

Mr. DICKSON. Well, I wish you had time to come down and have a look at the plant.

Mr. METCALF. I am going to skip the next witness listed, temporarily, and call Mr. Sylvan Donegan, of the Melrose Mine, Mill, and Smelter Workers Union, president.

Glad to have you with us, Mr. Donegan, and have you down here from Melrose from union No. 904 to testify, and I await whatever testimony you want to give in your own way.

STATEMENT OF SYLVAN DONEGAN, PRESIDENT, MELROSE MINE, MILL, AND SMELTER WORKERS UNION, LOCAL NO. 904, MINER, EMPLOYED BY VICTOR CHEMICAL CO., SILVER BOW, MONT.

Mr. DONEGAN. Well, Mr. Chairman and Congressmen, I work for Victor Chemical and their mines in Silver Bow, and mainly they have two mines there. They call one the Maiden Rock and one the Canyon Creek, and these mines aren't shafts—as I understand you went down here in Butte—they are drifts into the mountain; and right at the time, primarily, we are interested in our gas problems and dust problem.

Mr. METCALF. What do you mine there?

Mr. DONEGAN. Phosphate. Although we have fall of ground accidents, the same as they do anywhere. Right at the present time we have an acute gas problem that arises from the fact that they are blasting at all times of the shift; and the reason that they are blasting at all times of the shift is that they are using a method of mining that has been new to me since I mined there—I have mined before—but this is a new method to me there where they run in their—what they call their main haulageway in hardrock, and they are not on the bedded ore stuff with their main haulageway, consequently, they drive intermediate drifts every 30 feet into the bed and from there

they pull ore out with the slushers—I suppose you have seen them down in the mines.

So to get that ore down to feed into these slusher lanes so the slusher buckets can pick it up, they have to blast. Well, our ventilation system just don't stand that amount. It's kind of acute.

Now, there hasn't been any severe accidents as a consequence of it, but there's always the possibility, because, firstly, half the time you can't see your hand in front of your face, and then half the time you are in such a physical condition you don't care whether you see your hand in front of your face, so, all in all, it's kind of a mess.

Now, I haven't seen any of these air-conditioning systems like they have in the mines of Butte. I haven't seen any of them. I have never seen them and I don't know how they operate. We don't have anything like that.

The only ventilation that we have is some air raises with a fan connected to them. Well, right now we are at the time of the year when the air has a change of periods. Some days when it is warm, why, consequently the air rises, and when it's cooler the air goes down; and then, at times, there's an intermediate period when the air doesn't move at all. So, when we are blasting these slusher lanes we will hit intermediate periods when it's especially worse than other times, because this air is not moving.

I believe that's about all I have now.

Mr. FJARE. How long has that mine been operating up there?

Mr. DONEGAN. About approximately 6 years now. It could be one way or the other.

Mr. FJARE. How many fatalities have you had in that period; do you know?

Mr. DONEGAN. I know I am sure of 2 and possibly 3, but I can't say for sure there was 3, but I know there was 2.

Mr. FJARE. You don't think there has been more than 3 in 6 years?

Mr. DONEGAN. No, I don't think there has.

Mr. FJARE. That obviously is a comparatively safe mining operation?

Mr. DONEGAN. I would say that's a good one.

Mr. FJARE. Phosphate. In mining phosphate are you subjected to silica?

Mr. DONEGAN. Yes; I was telling you in these main-haulage way drifts that they are running, they are running it in what they call the chert, and I believe it has quite a siliceous content. Now, just what it is, I couldn't say. I don't have the facilities to know, but I know they do crush it and use it as a flux—a siliceous flux in their plant here at Silver Bow, but what content of silica has to be in it for that I couldn't say, I don't have those facilities.

Mr. FJARE. You say they have some ventilating system. Will you explain to the committee just what it is composed of?

Mr. DONEGAN. Well, mostly it's raises run to surface, or running from the bottom levels maybe there will be a raise run clear through to the surface. Well, this air circulates through these raises where the raises are. Of course, the raises are always behind your main heading drifts and so along these raises they have to put a fan and force ventilate the drift with a fan.

Mr. FJARE. Do they force the air out?

Mr. DONEGAN. No. No. They use a circulating system, I mean, the air pressure itself; as I say, the air when it's cold—it acts as a funnel and the air comes down through it.

Mr. FJARE. In other words, it is strictly a ventilating system to bring air into the mine for breathing purposes rather than to remove the dust from the mine; is that what I gather?

Mr. DONEGAN. I would say—I would say so.

Mr. FJARE. Well, would you say this: That there are no provisions provided or no provisions made to remove dust from the mine?

Mr. DONEGAN. I would say that—that there is no provisions made to remove the dust nor the smoke.

Mr. FJARE. Does the company tell you there are provisions for removing dust?

Mr. DONEGAN. No; they don't tell us that.

Mr. FJARE. What kind of temperatures do you have to work in in that mine?

Mr. DONEGAN. Well, as I remember it, they used to have a thermometer sitting there in the drift, and I think it went around 48°, and I would say——

Mr. FJARE. Quite cool, in other words?

Mr. DONEGAN. That the yearly that it's pretty constant.

Mr. FJARE. 48°.

Mr. DONEGAN. I would say that it probably would vary some, but it's not hot.

Mr. FJARE. Is there any amount of water or spray or vapor used to settle dust?

Mr. DONEGAN. None.

Mr. FJARE. It's a dry mine?

Mr. DONEGAN. Dry.

Mr. FJARE. How many men involved?

Mr. DONEGAN. Presently I think there's 150, maybe, or 125. Now, that's not all underground. That's in the overall operation of the two mines.

Mr. FJARE. Do you wear masks or anything to prevent dust breathing?

Mr. DONEGAN. No.

Mr. FJARE. That's all.

Mr. METCALF. How far underground are you working?

Mr. DONEGAN. How far under?

Mr. METCALF. Yes.

Mr. DONEGAN. At the particular site I am working in, it's called the Canyon Creek site and they started at the 5,500 level. You see, these levels go into the mountain like this [indicating]. Well, they have what they call the 5,500 level, the 5,800 level, the 5,900 level, the 6,200 level, and the 6,500 level. Now those are their main levels and I go in at the 6,200 level, approximately 2,500 feet—I am not setting that exactly because I don't know, but approximately around that—maybe 2,000.

Mr. METCALF. Do you have a safety committee in your union?

Mr. DONEGAN. Not that——

Mr. METCALF. A grievance and safety committee?

Mr. DONEGAN. Not that I can say is active there. No.

Mr. METCALF. Do you have a joint safety committee with the management, Victor Chemical Co.?

Mr. DONEGAN. No.

Mr. FJARE. Do you have a grievance committee?

Mr. DONEGAN. Yes.

Mr. METCALF. Have you taken some of these safety questions up with the management through your grievance committee?

Mr. DONEGAN. Yes; and on this particular question of gas and smoke we have approached the management with the problem that they have, so, in the back end, behind these regular slusher lanes that they are using at this time, they are driving what they call an air raise; and they asked us to bear with them until this raise was driven and then they said they felt sure that that would clear up a lot of the condition; and, that if the air raise itself didn't do it, that they would force ventilate it and that they would put big enough fans in there to force ventilate it; but we have borne with them quite a while now.

Mr. FJARE. Well, by "quite a while" what do you mean? Did they promise this 5 years ago and they still are not doing it?

Mr. DONEGAN. Well, no, I have been talking in terms of months.

Mr. FJARE. Yes?

Mr. DONEGAN. But it's still quite awhile, as I say, in a small mine.

Mr. FJARE. Have they had a reasonable opportunity, do you think, to put the raise in?

Mr. DONEGAN. Yes; I think they have.

Mr. FJARE. They are working on the raise now?

Mr. DONEGAN. Yes; they are working on it?

Mr. FJARE. In mining phosphate is there any particular industrial hazard peculiar to phosphate that's not true in copper mining, and so forth?

Mr. DONEGAN. Do you mean in accidents or diseases?

Mr. FJARE. No; I am talking about diseases, such as when we are mining copper, silicosis is a disease.

Mr. DONEGAN. Well, yes; I think the silicosis is.

Mr. FJARE. That's the one?

Mr. DONEGAN. Yes.

Mr. FJARE. Now, you mentioned gas in the mine, what kind of gas is that?

Mr. DONEGAN. Powder gas.

Mr. FJARE. From blasting?

Mr. DONEGAN. That's right.

Mr. FJARE. I see. All right, that's all.

Mr. METCALF. Well, thank you, I think that's all we have or, at least, Mr. Donegan, that's all we have time for, and I think you, again, have brought to the attention of the committee a condition that we will certainly go into further and explore in our further studies of the developments in these phosphate mines. We all appreciate your coming here and giving us the benefit of your testimony.

Mr. DONEGAN. And I thank you for your time.

Mr. METCALF. The next witness is Stanley Younce, of Anaconda—Union No. 117.

Mr. Stanley Younce.

You, also, are from the smelter?

STATEMENT OF STANLEY YOUNCE, ANACONDA, LOCAL 117

Mr. YOUNCE. From Anaconda, yes; and my name is Stanley Younce.

Mr. METCALF. And you are going to help us with some further testimony about safety conditions at the smelter?

Mr. YOUNCE. Yes.

Mr. METCALF. Well, I wish you'd go ahead. We will be glad to hear you.

Mr. YOUNCE. I have worked there 6 years—started in 1950—and I think our situation over there is a lot different than Butte has here. We have dust and gas—very bad gas, and, of course, the company does furnish us equipment—muzzles for the gas, but you can't wear a muzzle just a certain length of time.

Mr. METCALF. Would you mind if we interrupted as you went along, or would you like to complete your statement?

Mr. YOUNCE. No; that would be fine. Any way you want to do it.

Mr. METCALF. Fine. Mr. Fjare would like to ask you a question right now.

Mr. YOUNCE. Yes.

Mr. FJARE. You are mentioning gas in the smelter over there?

Mr. YOUNCE. Yes.

Mr. FJARE. Would you explain to me and the committee the conditions under which this gas accumulates and causes you trouble?

Mr. YOUNCE. Yes. I work in the phosphate department——

Mr. FJARE. You work where?

Mr. YOUNCE. In the phosphate—fertilizer—and our gas is sulfuric fumes gas, and I have been on the crane—out in the aging shed it's called—for well, just recently I got off the job about 2 weeks ago. I have been on that about 2½ or 3 years. Now, like I say, that muzzle, it does cut a certain percent of the gas, I don't know what percent it is.

Mr. FJARE. Yes, I understand. Now, aren't there stacks provided for the drawing off of this gas?

Mr. YOUNCE. That's what we have been trying to get through. We haven't. In that particular building there is no ventilation.

Mr. FJARE. None whatsoever?

Mr. YOUNCE. The only ventilation we have is a small opening at the top. It's a high building and there's a couple of windows on one side.

Mr. FJARE. No fans?

Mr. YOUNCE. Nothing to——

Mr. FJARE. Is the gas a prevalent thing? By that I mean to say constantly, or just occasionally?

Mr. YOUNCE. It's there constantly.

Mr. FJARE. Do you have to wear a muzzle there all the time?

Mr. YOUNCE. Now, to show you how bad it is—I developed a leak in my muzzle for about 2 days—and I didn't know whether it was because the gas was so strong or whether it was my muzzle, but it was just about 2 days. I lost my voice for about 3 months. That's how strong that sulfuric acid is.

Mr. FJARE. Have you brought these conditions to the attention of the company——

Mr. YOUNCE. Yes.

Mr. FJARE. That that building is not particularly adequately ventilated?

Mr. YOUNCE. Yes.

Mr. FJARE. Do they admit that it's not?

Mr. YOUNCE. Well, they just don't say. I say they just don't say.

Mr. FJARE. They don't say that they are going to do anything about it?

Mr. YOUNCE. No. No; that's right. Now, the dust situation, now, I don't know whether phosphate dust is silicotic or not, although, I think the phosphoric acid in the phosphate fertilizer is 33 percent, and I don't know what acid does to a human body, but 1 building there—the wring row, it's called—that dust is grinding and then it's sacked out.

Well, you take from this wall [indicating wall of courtroom], well, a little bit further than that one [indicating opposite wall], somebody walks into the door, you just—you don't hardly recognize them from dust.

Mr. FJARE. What goes on? Are they crushing ore or something?

Mr. YOUNCE. It isn't ore—I don't think they class it as ore—it is phosphate, which this fellow that just got through testifying does mining on. I don't know whether the dust bothers you or whether the phosphate acid—phosphoric acid which is in the dust bothers a person, but I worked at that building 2 years ago or about 3 years ago, and there is more dust now than there was 3 years ago.

Mr. FJARE. Why?

Mr. YOUNCE. Just more dust.

Mr. FJARE. Well, has ventilation dropped off in that 2-year time?

Mr. YOUNCE. Well, they had the same filters, which are called Schley filters, but the machinery is open. It's getting more dust. I mean, they grind the same fertilizer and the same amount, so if there is more dust now than 2 years ago, why, something is wrong. I mean, we can wear our muzzles all right, but you just can't wear a muzzle and work. I mean you can wear a muzzle and go through the building, or if you want to climb up the building and wear the muzzle, but to wear it constantly, you can't—you can't work or you can't breathe.

Mr. FJARE. In your opinion, could that be corrected, that dust condition?

Mr. YOUNCE. Definitely; yes.

Mr. FJARE. And the gas from the other building of which you were speaking could be eliminated?

Mr. YOUNCE. Gas, like I say, in a smelter you are going to have gas and dust—it's a smelter; but I know that a lot of it could be removed out of this——

Mr. FJARE. You say, "you know that"?

Mr. YOUNCE. I know it.

Mr. FJARE. Will you tell me why you know?

Mr. YOUNCE. Well——

Mr. FJARE. Is it being done somewhere else, as an example?

Mr. YOUNCE. You take like in the aging shed as it is called. Phosphate has to age 19 days before it's ready to be ground—ground and then sold—shipped out. Now, if you've got better ventilation, you're going to have better air, that's for sure. Now that building is a very large building; well, the windows in the building wouldn't carry more

than—well, there's about 4 windows on 1 side—just 1 side, and the other big side has no windows at all. I know if you got better ventilation, you gotta have better air. Now, I have worked in that 1 particular building about 2½ years and it has been the same thing constantly.

Mr. FJARE. In other words, to sum it up, you would insist that the company can do a great deal toward eliminating the hazards of gas and dust in the particular building in which you work, and are not doing it, in your estimation?

Mr. YOUNCE. Yes. Now, you take—pardon me, just 1 more instance—my department has been shut down for about 2 weeks or 2 months. We have just been back about, oh, about 3 weeks ago in phosphate, and I was in the roaster tube building. If I could say a minute about roaster tube, now, there is what—we get the ore from the Butte mines—it comes down to roaster tube, now, if you want silicotic dust, there's one place—the "charge floor" it is called that they do the dumping of the ore that comes in. In other words, not dumping, but they put an air hose up in the car and blow down to blow the ore out of the car. Now, you walk through the building with that white shirt on and it's black with copper dust. Now, I think that copper dust is a silicotic dust.

Mr. METCALF. Will you yield a minute?

Mr. FJARE. Yes. If I may say this: The reason I ask these questions, Mr. Younce, is because during the last few days I think it has been graphically demonstrated to me and the committee that there are means of eliminating dust. To cite an example: We witnessed a rock crusher or ore crusher, which, undoubtedly, under normal circumstances would have created a blinding dust out there. Actually, we were capable of standing alongside that crusher and see no dust whatsoever, and the only dust which we did see was dust being drawn into a duct and eventually eliminated in the dust arrester. That's why I want to know and why I am questioning and asking you if such facilities exist over there, that I know, and I think you know, too, are in existence.

Mr. YOUNCE. Oh, yes; this could be eliminated, definitely.

Mr. FJARE. I yield.

Mr. METCALF. You think that if there was a periodic inspection and a report as to the conditions that that would be helpful, both to your organization—your union, and to management and to your negotiations in getting this condition corrected?

Mr. YOUNCE. I do. I think that it should be against the law that a man should work in such a dusty place.

Mr. METCALF. Do you think that there should be—we all recognize that there is going to be dust——

Mr. YOUNCE. Definitely, yes, and gases.

Mr. METCALF. But you think that there should be certain minimum standards that had to be met and had to be complied with before you were required to work there?

Mr. YOUNCE. I think so.

Mr. METCALF. Well, we interrupted you, now, if you have some more things to say——

Mr. YOUNCE. No. That covers it.

Mr. FJARE. Excuse me, Carl, you haven't had a chance.

Mr. ELLIOTT. No questions.

Mr. FJARE. Just one more question: You feel that these minimum standards or the establishment of these minimum standards which all of us are interested in, you think they can be better accomplished by Federal legislation rather than by the associations between the employees and the company?

Mr. YOUNCE. Well, as I said, it has been 3 years since I worked in this one building, and there's more dust now than there was 3 years ago.

Mr. FJARE. Whenever your union negotiates with your employer—the company—for a contract, in addition to additional wages, don't you also bring into the present contract working conditions, such as the elimination of dust?

Mr. YOUNCE. I think so.

Mr. FJARE. You say you think so?

Mr. YOUNCE. I don't know. I haven't read the contract.

Mr. FJARE. Well, I would think that that would be a very obvious thing.

Mr. METCALF. Have you ever been on the negotiating committee?

Mr. YOUNCE. No.

Mr. METCALF. Well, as a member, I doubt if he would be competent to know what goes on, either in the negotiating committee.

Mr. YOUNCE. But could I say one more thing: That is true, I think that the negotiation committee of the union and the company should try to get that, but if there is a crime committed downtown and the State or the city police can't cope with it, then the Federal Government helps them out, so it's the same thing as this.

Mr. ELLIOTT. You think it has gone so far and has got so bad that you just can't cope with it?

Mr. YOUNCE. Well, it's bad.

Mr. FJARE. Well, have you tried to cope with it by negotiations with your company? I am talking about the union and its contract negotiations, in addition to additional wages or whatever you happen to want in that deal, have you attempted to correct deplorable working conditions under the terms of the contract?

Mr. YOUNCE. I think they have.

Mr. FJARE. And they have failed?

Mr. YOUNCE. Well, there might be some better conditions, but our immediate department hasn't changed any at all. Now, some departments, they say, have eliminated most of the dust—but like I say, you are going to have some dust and some gas, it's a smelter is what it is; but I think a lot of it could be eliminated. Now, our department has gotten more gas and more dust. Now, on my crane the operator that used to run it before I got it, he had to quit because his heart was bothering him. He has got to wear a muzzle, and a muzzle is hard on your heart. Now, he went out there and relieved me just a little while ago, oh, I'd say a month ago, and he said the gas is stronger now out there than it was when he was out there.

Mr. ELLIOTT. Well, have you told your union safety committee about that situation?

Mr. YOUNCE. We have safety committees over there like they do have here in Butte, but our safety committees work mostly—if you are walking up a stairs and see a broken step, they report that; but, for as far as gas and dust are concerned the safety committee can't do anything about it.

Mr. FJARE. Can't do anything, why?

Mr. YOUNCE. Hasn't been able to do anything.

Mr. FJARE. Haven't been successful in getting anything corrected?

Mr. YOUNCE. We've reported it. I mean it's a common, known fact that it's there; but you don't have to report that to the safety committee, because they can see it.

Mr. FJARE. Well, I think it's a great American privilege of the unions in this country to be able to get higher wages, and I can't understand why you can't strike to get better working conditions, too—that should be a part of the contract, it would appear to me—that those working conditions be corrected along with adequate wages.

Mr. YOUNCE. Well, it should be.

Mr. FJARE. Maybe I am all wrong, but it would appear it should be.

Mr. YOUNCE. It should be.

Mr. FJARE. My reason for saying that is that I know that, no matter what kind of negotiations you go into, you are always more successful if you can deal with the people involved rather than going to a third party, even if it includes the Federal Government.

Mr. YOUNCE. True.

Mr. FJARE. Normally. Now, I'm not saying that there isn't the need for Federal safety regulations or laws—we are attempting to find that out—but it would appear to me that working conditions should be an equally important part of the labor negotiations as well as wages.

Mr. YOUNCE. It should be; but don't you think if they can't be settled that the Federal Government should help out? What I mean is: The people are the Governmnt, and when the people suffer that——

Mr. FJARE. Well, I agree, but I think the great success of American labor unions has been because of this success of being able to settle negotiations by mutually setting down at a table and mutually going over the thing rather than running to the Federal Government and having them settle or establish the labor relations that they have to have with the employer.

Mr. YOUNCE. Well, that's true, too; but I mean if it can't be settled, why, I think some help should be made so they could.

Mr. FJARE. Well, the purpose of my questioning is obvious, I think. It is to determine whether you have made a concerted effort as an organized union in negotiating with your employer to correct these things, or whether you are just saying, "Well, it's wrong; they are not doing anything about it; let's go to Uncle Sam and get him to do it." Do you understand?

Mr. YOUNCE. Yes.

Mr. FJARE. You know what I am getting at?

Mr. YOUNCE. I see what you mean.

Mr. FJARE. That's all.

Mr. ELLIOTT. You think that the conditions under which you work, with reference to these fumes, could undoubtedly be greatly improved?

Mr. YOUNCE. Yes; yes. Naturally, you are going to have some.

Mr. ELLIOTT. But it is your judgment that in 3 years they have not been improved, but, on the contrary, have grown worse?

Mr. YOUNCE. That's right.

Mr. ELLIOTT. How many people work in your——

Mr. YOUNCE. Immediate department?

Mr. ELLIOTT. Immediate department?

Mr. YOUNCE. Approximately 300 men in the phosphate part, I think, maybe a little less.

Mr. ELLIOTT. Are there other departments?

Mr. YOUNCE. No; not quite; no; I would say around 260.

Mr. ELLIOTT. Are there other departments in the general area of the department in which you work, besides the phosphate department, that you work in?

Mr. YOUNCE. No. Until just recently, like I say, our department is cut down, and I did go to roaster 2. Now, there they have a different kind of gas and a different kind of dust. They have copper dust, which the Butte miners do get. They dump the ore there, but outside of that I just work in the phosphate department.

Mr. ELLIOTT. Well, now, you say that you can't work indefinitely, or you can't work an 8-hour period and wear this muzzle; is that right?

Mr. YOUNCE. That's correct.

Mr. ELLIOTT. Well, what do you do—wear the muzzle until you get tired and then pull it off?

Mr. YOUNCE. You go out of the building.

Mr. ELLIOTT. Oh, you go outside then?

Mr. YOUNCE. You get out and well, leave the machine run by itself. Because, if you wear the muzzle, like I say, it's—it does cut a lot of dust and gas, but it doesn't cut it all, and then, they are just hard to breathe through. You just—you can't do it, and you can't work with one on. What I mean is, if you are going to work, even in the dust, you have to take your muzzle off, or you can't work. You can't breath and work at the same time with the muzzle on.

Mr. ELLIOTT. Well, what type and kinds of diseases are developed by the employees who work in the phosphate department?

Mr. YOUNCE. Well, I think—like I say, I don't know—but your sulfuric fumes is so strong that I have seen men pass out just [snapping fingers] go out like that from the fumes.

Mr. ELLIOTT. What condition would that be?

Mr. YOUNCE. Well, they were mixing at a piece of machinery there that is called a mixer, you dump so much phosphate rock, so much phosphoric acid and so much sulfuric acid; well, sometimes the sulfuric acid is strong, it throws up very—the fumes are bad.

Mr. ELLIOTT. Well, now, when these fellows fall down what do you do, give them artificial respiration or something?

Mr. YOUNCE. Well, if somebody is there working by them at the time, you grab them and pull them out of the machine room.

Mr. ELLIOTT. What diseases, if any, are developed?

Mr. YOUNCE. Well, I think, I don't know for sure, but I think Mr. Salvas read in his statement that Deer Lodge has a very high lung cancer rate, and I think that the sulfuric fumes is so strong that it does make your lungs very bad. I've had mine—well, like I say, I lost my voice for about 3 months and it was just a continual burning all the time; and I think you could get lung cancer from that, but that's just my opinion of it. That's all I have.

Mr. ELLIOTT. That's all.

Mr. METCALF. Thank you very much for the testimony, and, as you know from the questions, it has been very helpful to the committee.

Mr. YOUNCE. Thank you.

Mr. METCALF. Glad to have you down here.
Now, we have Mr. Edwin Martin from Anaconda, Local 117.
Your name is Edwin Martin?

STATEMENT OF EDWIN MARTIN, ZINC STRIPPER, ANACONDA, LOCAL 117

Mr. MARTIN. Right.
Mr. METCALF. And what is your job down at Anaconda?
Mr. MARTIN. I am an operator at the zinc electrolyzing plant.
Mr. ELLIOTT. What type of operation?
Mr. MARTIN. I strip the zinc off the electric cathodes.
Mr. METCALF. And will you tell the committee what type of safety conditions are down there that you want to talk about? Proceed in your own way.
Mr. MARTIN. Well, in the tank room, as we call it, we have sulfuric acid and zinc sulfate. Now the fumes in there—at least I surmise that it's the fumes—eat the enamel off your teeth in time. When I went to work there 6 years ago I never had a bad tooth in my head. Now most of them are bad.
Mr. ELLIOTT. Are they bad because you got this sulfate or whatever it was on them?
Mr. MARTIN. Well——
Mr. ELLIOTT. Has your dentist told you that?
Mr. MARTIN. No. My dentist did tell me, however, that that was a contributing factor; and I was told, when I went to work there, to drink lots of milk—that that would counteract that. I do. I drink about 2 quarts of milk a day.
Mr. FJARE. Does it happen to everyone working in the department?
Mr. MARTIN. I believe so. At least, everybody in there has trouble with their teeth. They also have trouble with their stomachs. Now, why, I don't know. It must have something to do with that. We wear a gauze muzzle. They have tried lots of other kinds of muzzles, but the gauze is the most efficient. I do myself believe that they could ventilate that building to where we could eliminate the muzzle altogether.
Mr. FJARE. No ventilation provided now?
Mr. MARTIN. The only ventilation we have now are windows. They open the windows and we get all the gases from the other departments, which don't help, either.
Mr. METCALF. Well, I think that's all, Mr. Martin. Again you have brought us a situation that we will be certainly interested in exploring. Is that all of your statement?
Mr. MARTIN. Yes; it is.
Mr. ELLIOTT. What percentage of the people who work in your department have stomach illnesses or trouble at one time or another?
Mr. MARTIN. Well, I never broke it down to any percent, so I just couldn't tell you.
Mr. ELLIOTT. Well, I know that, but, essentially, do all of them working there have stomach troubles at some time?
Mr. MARTIN. At times, yes; and, like I say, all of them that have worked there any length of time have trouble with their teeth. We have more young people there with false teeth than any place I have ever been in my life.

These conditions have been brought to the company many times, and so far we have no satisfactory answers.

Mr. ELLIOTT. Are there any satisfactory answers, do you think?

Mr. MARTIN. Yes; I do.

Mr. ELLIOTT. And you think that would be better ventilation?

Mr. MARTIN. Yes.

Mr. ELLIOTT. And filtering out some of these fumes by some means or other out of the air in which you work?

Mr. MARTIN. All the fumes come—you are standing above these cells—the fumes are rising off these electrodes. I believe, and so does everybody else around there, that ventilation can be provided to draw the fumes off of these cells and make them go downward. I have seen it done in other places.

Mr. ELLIOTT. Where has that been done?

Mr. MARTIN. Well, I mean to say it hasn't been done in the smelter that I know of; but when I was in the Navy aboard ship we had that type of ventilating system.

Mr. ELLIOTT. That pulled the fumes off and carried them out?

Mr. MARTIN. That's right—brought the good air from the top and pushed the bad air out the bottom.

That's all I have to say.

Mr. METCALF. Thank you very much. Again, as I say, you've been very helpful to the committee.

At this time the committee will recess until 9 o'clock, tomorrow morning, at which time we will hear some of the patients that have to be heard at a certain time that you are going to hear, and after that we will hear Dr. Ensign and the representatives of the Steelworkers Union and of the Montana Mining Association, and will complete the list of the Miners Union witnesses that were given—in that order.

(Whereupon the hearing recessed at 6 p. m., Tuesday, September 18, 1956, to resume again on Wednesday, September 19, 1956.)

MINE SAFETY (METALLIC AND NONMETALLIC MINES)

WEDNESDAY, SEPTEMBER 19, 1956

UNITED STATES HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON MINE SAFETY OF THE
COMMITTEE ON EDUCATION AND LABOR,
Butte, Mont.

The subcommittee of the Committee on Education and Labor of the House of Representatives of the United States reconvened on Wednesday, September 19, 1956, pursuant to resolution adopted by the 84th Congress, at 9 a. m., mountain standard time, in the courtroom of the Federal Building, at Butte, Mont., Hon. Lee Mecalf, chairman, presiding.

Present: Representatives Elliott and Fjare.

Also present: Russell C. Derrickson, chief investigator; and John O. Graham, minority clerk.

Mr. METCALF. The subcommittee will be in order. Before calling the first witness, I have a statement from Mr. Arnold Olsen, attorney general of the State of Montana, and I will read the final paragraph. He says:

I am certain that the firsthand information your committee receives from the miners, union leaders, and representatives of industry will be of great value to you. I am personally looking forward to appearing before your committee at the earliest possible time, but would not impose upon the time allotted to my friends and neighbors, the miners of Butte.

Without objection this statement will be incorporated in the record. So ordered.

(Letter and statement here ordered incorporated in this record, and is as follows:)

STATE OF MONTANA,
DEPARTMENT OF ATTORNEY GENERAL,
Helena, Mont., September 15, 1956.

Hon. LEE METCALF,
Chairman, Congressional Subcommittee on Mine Safety,
Butte, Mont.

DEAR CONGRESSMAN METCALF: My congratulations to you for your part in making possible a congressional hearing on the very important subject of mine safety. You have ably demonstrated on many occasions, as you are doing now, your interest in the welfare and problems affecting the well-being of Montana people.

I am enclosing a statement for the attention of your committee. With the full realization that you are primarily interested at this time in hearing from the miners, union leaders, and representatives of industry, I nevertheless look forward to the opportunity of appearing before your committee at the earliest possible date.

With highest personal regards, I am,
Very truly yours,

ARNOLD OLSEN, *Attorney General.*

STATEMENT BY ARNOLD OLSEN ON MINE SAFETY

When the day comes that safety is cheaper than nonsafety to industry, accidents and industrially caused diseases will reach a new low. Specifically with reference to Montana, we have an Industrial Workman's Compensation Act which is so archaic and outmoded that in many cases an injured workman would receive more from the department of public welfare than he could from his industrial accident insurance.

Montana must have a new and up-to-date industrial accident compensation law. We must have a law such as 45 other States of the United States have, fully recognizing that silicosis and other crippling diseases caused by industry are proper subjects for insurance coverage. Montana needs a law which has as its primary goal the rehabilitation of the injured workman; a law which will provide the injured employee with payments sufficient to maintain himself and dependents in a standard compatible with decency and health.

Industry has made some progress, but what progress made is little consolation in the face of a public-welfare bill of approximately $4½ million for silicosis alone; a bill brought about by unhealthy working conditions in industry; a bill which is referred to the taxpayer for payment.

Devastating diseases caused by contact with silica dust, exposure to lead, arsenic, and other metals, as well as toxic vapors, liquids, and gases, can no longer be passed off as inevitable. An intensified program by Montana's Industrial Hygiene Department, working in cooperation with the United States Public Health Service, the Federal Bureau of Mines, and representative of industry, coupled with a new and realistic industrial workman's compensation law, could in a short time effectively cut the present accident and industrial disease ratio.

I am certain that the first-hand information your committee receives from the miners, union leaders, and representatives of industry will be of great value to you. I am personally looking forward to appearing before your committee at the earliest possible time, but would not impose upon the time allotted to my friends and neighbors, the miners of Butte.

Mr. METCALF. The first witness that we have this morning is Mr. Clarence Mackey, representing the Butte Miners Union. Mr. Mackey the committee is pleased to have you with us this morning, and will you give us your address and tell us about the kind of testimony you want to present?

STATEMENT OF CLARENCE MACKEY, MINER, REPRESENTING BUTTE MINERS UNION

Mr. MACKEY. Well, I live at 310 North Main, I wanted to tell you you just from the time I started, the shape I was in when I started working and the shape that I am in now.

Mr. METCALF. Well, you proceed as you wish. What was your job in the mine?

Mr. MACKEY. A miner.

Mr. METCALF. You were just a regular miner?

Mr. MACKEY. Yes. I started in 1937, and I had always been in good health up until the accident.

I got hurt in 1950 in the Belmont mine, and I never had lost any—any sickness or anything that caused me to lose time up until the time that I got hurt; and I haven't worked over 2 or 3 weeks at a time since I got hurt without going back to the hospital.

I have been in the hospital 20 times since I got hurt.

Mr. METCALF. What was the date of your accident?

Mr. MACKEY. It was December the 18th in 1950.

Mr. METCALF. And will you tell us about how the accident happened?

Mr. MACKEY. Well, I was working graveyard shift at the Belmont mine, and I had a partner swinging in—it wasn't my partner, it was swing in, it wasn't my regular partner—and we had just about an hour to go before quitting time; and I said: "If we hurry, we will get another car moved." And I said: "You will have to come along with me to spot the car, because it's on a grade." So I told him to go ahead and spot over there. He pulled up in and ran away from the car, and I'm trying to block it with the wedge, and the track is wet and the wedge is wet and it just slips down and backs me into a post—between the car—it caught me between the car and the post, and I didn't—I couldn't get out. The last thing I can remember hollering is for him to come and get it. It had me pinned. When I woke up, I was on a stretcher. They was carrying me out.

Mr. METCALF. Does that complete your statement, Mr. Mackey?

Mr. MACKEY. Yes.

Mr. METCALF. Just a minute. Mr. Fjare.

Mr. FJARE. The nature of the accident—I am wondering why you have to use this equipment [referring to oxygen mask and tank]?

Mr. MACKEY. Well, it squashed me from here [indicating] all up. I bled from my mouth and my nose and my eyes and my ears, and cracked my ribs all the way around, and I got out—I was in the hospital then about 6 weeks, I believe.

Mr. FJARE. What would you say was the primary cause of the accident?

Mr. MACKEY. I would say it was the negligence on the part of having the motor down there that didn't have a brake on it that would hold the car, so that, well, I could block it.

Mr. FJARE. In other words, the car was in a dangerous position, is that what you would state?

Mr. MACKEY. Yes, that's right. The car should have—the motor should have had—should have had a brake on it so that it could be held. You could put the brake on and hold it until I got it blocked.

Mr. FJARE. In other words, you think the equipment should have been improved?

Mr. MACKEY. I think it was faulty equipment.

Mr. FJARE. Faulty equipment.

Mr. ELLIOTT. Do you have to use this oxygen tank all the time?

Mr. MACKEY. Yes. I use about a tank of that a day. They bring it up to me about 10:30 every morning. Oh, sometimes, I can walk around. It gets, oh, pretty good, and I will get along 4 or 5 hours without it; but in the morning up until 11 or 12 o'clock, I am all choked up, and then for maybe 2 or 3 hours at a time, why, I can possibly get along without it. Anytime that I lay down, why, then I've got to have it.

Mr. FJARE. In other words, you have to use this equipment because of lung injuries; is that correct?

Mr. MACKEY. Yes. Well, I guess, outside of—I was in physically good condition prior to this. I never had to use no oxygen or anything to make me sleep and get by. I have always worked pretty steady.

Mr. FJARE. Just one more?

Mr. METCALF. Surely.

Mr. FJARE. I think I remember you stating in the opening remarks that this accident happened about an hour before you were to finish the shift?

Mr. MACKEY. Yes.

Mr. FJARE. And I think you said something about stating to your partner or the man working with you: "If we hurried we can get another load out"?

Mr. MACKEY. Yes. That's as far as we went, see. We was going out there to block it and go get another load, but we never—that's as far as we went. He said: "Well, I will have to come with him." I had been cleaning up along there in order to get ready to muck the next car with the mucking machine.

Mr. FJARE. In other words, you don't contribute the fact that you were hurrying——

Mr. MACKEY. No.

Mr. FJARE. Being responsible for the accident?

Mr. MACKEY. No. Not to that at all.

Mr. FJARE. That is all.

Mr. METCALF. Is that all you have, Mr. Mackey, does that complete your statement?

Mr. MACKEY. I believe it does.

Mr. METCALF. Well, we want to thank you for coming over and telling us about this condition.

The next witness is Dr. Paul R. Ensign, who is appearing here at my request, after I had written to the Montana Public Health Service, suggesting that witnesses testify. I also wrote to the various State officials, and Dr. Ensign is appearing on behalf of the Montana Health Service.

Dr. Ensign, I notice you have a prepared statement and you may identify yourself for the reporters and then read your statement. Do you mind if we interrupt you, or would you prefer to complete your statement and then have the interrogation?

Dr. ENSIGN. It makes no difference. It may be that during some interruptions that some of the questions may be answered later. That might save some time.

Mr. METCALF. We will let you read your statement and then we will question you.

STATEMENT OF DR. PAUL R. ENSIGN, DIRECTOR OF THE DIVISION OF DISEASE CONTROL, AND ACTING EXECUTIVE OFFICER, MONTANA STATE BOARD OF HEALTH

Dr. ENSIGN. My name is Dr. Paul R. Ensign, director of the division of disease control, and acting executive officer of the Montana Board of Health.

As far as we are able to determine, no suitable figures on the extent and development of silicosis in Montana are obtainable. The board of health, because of its responsibility in the field of occupational health, needs such figures.

Because, in general, medical opinion agrees that there is a relationship between silicosis and tuberculosis, the map of tuberculosis rates is presented.

RATES FOR REPORTED CASES OF TUBERCULOSIS BY COUNTY:
Montana, 1950-1954

Note: Rates per 100,000 estimated population.
Dawson County and Fallon County have the same rate.
They have been placed in quartile on an alphabetical basis.

RATES PER REPORTED CASES OF TUBERCULOSIS BY COUNTY:
Montana, 1951-1955

Note: Rate per 100,000 estimated population.

The highest rates occur in counties with or close to Indian reservations and the four counties of Silver Bow, Granite, Deer Lodge, and Jefferson. We know why tuberculosis among the Indian population is high. Granite and Jefferson Counties have small populations so that a few cases in 1 year could have raised the rate, but study of the statistics shows them to be rather consistently high. The 1951–55 maps show some county changes due to small populations, but Granite and Jefferson Counties are still high. (See pp. 159 and 160.)

Now, if I may interpolate there, I am afraid I made the error of sacrificing clarity for brevity; and what I tried to say is: In Jefferson County here [showing maps, see pp. 159 and 160], on both sets of maps, for both sets of years—and it may mean something, or it may not, but of course they are small counties so that a few cases would make quite a difference in the rates.

Mr. METCALF. Now, Dr. Ensign, when you are referring to those, you are referring to two maps that you have incorporated as a part of your testimony—one map is entitled: "Rates for Reported Cases of Tuberculosis by County, Montana, 1950–54"; the other is entitled the same for "1951–55"?

Dr. ENSIGN. That's right.

Mr. METCALF. Well, now, those maps will become a part of your testimony and will be reproduced as best we can in the official record.

Dr. ENSIGN. Those maps are just sliding maps, so there is some duplication for a certain number of years in those maps, and we call those sliding maps on a sliding average.

I can get you others. Our multilithing machine—something happened to it and I had to do with those maps, but I can get you better ones.

Mr. METCALF. All right. Thank you, Doctor.

Mr. ELLIOTT. Let me ask you a question there: You say that you know what causes the tuberculosis in the Indians in the counties, but so far you haven't said what, and I would just like to know for my own information, what is the cause of the high incidence of the tuberculosis in the Indian counties?

Dr. ENSIGN. I think, in the first place, that we feel that the Indians are probably much more susceptible to tuberculosis than other people; and that their living conditions are such that they are pretty crowded, they are without—also—they are also sometimes their nutrition is pretty poor, which contributes to tuberculosis, and the fact that their living conditions are a little bit different than we would expect on their culture, or something has been put upon them by necessity. They will not live long with 1 family, so when you are trying to trace them in 1 family there may be a person that lived in 6 different families in 1 year, and, if that person happens to be tuberculous, it goes right through the families.

Mr. ELLIOTT. Would you say, then, that the same things, the same factors that caused the high rate of tuberculosis among the Indians, are not factors in these counties of Granite, Deer Lodge, Silver Bow, and Jefferson?

Dr. ENSIGN. We would expect that the population in those counties, as it is pretty similar to the populations of the counties in the other areas, although, as I am trying to say, Granite and Jefferson may or may not be important in this thing, they do have some mining industry

in them, but they are such small counties that 1 or 2 cases might make a difference.

I might explain that better by going to Petroleum County, which had as you see (refers to maps, pp. 159, 160) has 0.0 there for the 5-year period in both 5-year periods. One case—Petroleum County has a population of possibly 1,000 people—1 case in 1 year would have made them a rate of 100 per 100,000 people, if they had 5 cases in 1 year in 1 family for example, over the 5-year period they would still have 100, or had they had a case a year; and these other counties are not quite that small, but they are small enough so that their figures don't mean too much. The only reason I call attention to them is because they seem to be steady on both maps. There are other counties in there which have gone back and forth, such as Powell and Phillips and Meagher, which, because of their small population might fluctuate back and forth over a 5-year period. So, that Granite and Jefferson Counties, while they are on both maps, the figures do remain consistently high throughout the year, I mean, fairly high throughout the year, fairly high—3 or 4 cases each year—I can't say statistically that it means anything.

Mr. ELLIOTT. Well, now, Doctor, with respect to Deer Lodge and Silver Bow Counties, are those mining counties?

Dr. ENSIGN. One, as was brought yesterday, one is chiefly mining, and the other, I would say, was chiefly smelting—the raw materials at first come through there, although I think there are some mines in that area, too.

Mr. ELLIOTT. Do your studies, as a medical man and as a practitioner in the field of public health, lead you to the conclusion, and are you satisfied in your own mind, that the correlation between tubercular rates in these two counties, Deer Lodge and Silver Bow, is directly related to the fact that they are mining counties?

Dr. ENSIGN. Well, that's what I was about to go on to say. I think the majority of medical opinion would say that is true. There are some who disagree and if I might read my statement here further, I think that will answer the question.

Mr. ELLIOTT. Surely?

Dr. ENSIGN. Probably the most plausible explanation for the high incidence of tuberculosis in the other two counties, is the relationship to silicosis, since hard-rock mining and associated industries are the important industries. However, some well qualified medical authorities are not in agreement with the general concept that there is a relationship between tuberculosis and silicosis. They point to other factors such as lack of local public health facilities, the general educational level and alcoholism as contributing factors. As for the latter two, we have no way of knowing what their status is compared with other areas of Montana. We do know that local public health facilities are extremely inadequate.

The rate of tuberculosis in white males in Silver Bow County is nearly 3½ times greater than in white males of the rest of the State. This difference is statistically significant and would not have occurred by chance once in a million times. Therefore, there must be something other than chance operating to make this difference in tuberculosis morbidity rates between white males in Silver Bow County and the rest of the State.

This difference in rates, plus the historical accounts of association of silicosis with tuberculosis for two centuries, and the high rate of tuberculosis in other silicotic areas cause the burden of proof to rest with those who feel that there is no relationship between the two diseases. But, even so, tuberculosis morbidity cannot be considered a satisfactory measurement of silicosis.

Does that answer your question?

Mr. ELLIOTT. Yes, sir.

Dr. ENSIGN. Then, again, a few qualified medical authorities feel that silicosis is not a serious disease, and that it is much overrated. This opinion is also in disagreement with the present general medical concept. The State board of health does not have facilities to do research on this problem and must depend on the opinion of experts in the field. I am not an expert in silicosis. The limited amount of information on early silicosis and the conflicting opinion of medical experts makes it difficult for the State board of health to carry out its legal responsibility in protecting the health of the worker. They point up the need for research in this field.

Originally, it was my thought that the State board of health with the help of the United States Public Health Service could do a great deal by using its mobile X-ray unit for screening with miniature X-rays. But after consulting with the radiologist who has read the miniature films, I find that early silicosis cannot be detected by means of the miniature films.

The necessity of using 14 by 17 films increases the magnitude of the task to such an extent that it would appear to be one for the National Institute of Health rather than for the State board of health. The State board of health would assist with whatever meager figures or records are available. In the beginning it might be necessary to X-ray everyone every 6 months. As the study progressed it might be found that less frequent intervals would be satisfactory. In addition to the X-ray program itself, the degree of correlation between the radiologic assessment of silicosis and the incidence of chronic bronchitis, emphysema, and other symptoms must be determined. It may be that no correlation can be found and another method of evaluation other than X-ray must be used for silicosis.

In a recent study of pneumoconiosis of bituminous coal miners no correlation could be found between X-ray and clinical symptoms. If this were true for silicosis this could well be the cause for the difference of opinion among medical authorities.

Mr. ELLIOTT. Dr. Ensign, pneumoconiosis of bituminous coal miners, as you use it here, is what we commonly call silicosis; is it not?

Dr. ENSIGN. No. Silicosis is classified as one of the pneumoconioses caused by silica getting in the lungs. There are other things that might get in the lungs. Usually, in coal miners it might be carbon particles that get in the lung, for example; and there are iron-rock particles—iron deciderosis, and so forth, all of them are part of pneumoconiosis, but generally pneumoconiosis means something besides silicosis when it is used. Silicosis usually means this particular type of pneumoconiosis, and pneumoconiosis may cover everything else.

Mr. ELLIOTT. I see. Thank you.

Dr. ENSIGN. The purpose of the proposed study would be to discover silicosis in its earliest stages, and its relationship, if any, to tuberculosis.

This would make it possible to take measures to prevent later stages of both diseases and to prevent the spread of tuberculosis to others. It would help management to ascertain how effective the measures were that it has taken to prevent silicosis, and to know whether further steps should be taken. It would help both labor and management to know the amount of silicosis a new worker had at the time of his initial employment.

In establishing such an X-ray program certain agreements must be reached that give fair protection to both labor and management. It should be agreed that the X-ray films, all medical opinions and findings should be in a permanent file in the official agency, the National Institute of Health, in order to maintain the confidentiality that is a part of every physical examination or X-ray. Other satisfactory and necessary agreements should be reached prior to starting the program.

The point is that some agreement satisfactory to both parties should be drawn up so that there is no longer any impediment placed in the way of obtaining knowledge which will benefit a large part of humanity.

Mr. ELLIOTT. Do I get the impression from the first part of your statement that if size 14-inch by 17-inch X-ray films were used, that you could measure silicosis or pneumoconiosus in its early phases, where you cannot with the miniature films that are now being used?

Dr. ENSIGN. We used our miniature films for screening films in tuberculosis, cancer, and heart diseases a little while back, and we did not pick up much of anything, in fact, we didn't pick up anything in regard to silicosis, anything that comes very late in silicosis.

The 14 by 17 are necessary and will be one factor in picking up early silicosis. It may be possible, however, that a person's individual reaction to the silica entering the lung may be different for one degree that shows up in one person for one degree that would show up in the X-ray, than for another person. I mean, both of them might have the same degree of silicosis, but one might show more plentiful symptoms and more reaction to it for reasons that we don't quite understand at this time; but I think the clinical evaluation will have to go along with the X-ray evaluation if we are to determine the thing.

Mr. ELLIOTT. Well, now, if I've got the import of your testimony, and I am very much interested in the testimony you have given because we're searching a field—the committee here is searching for ways and means, or, at least, is attempting to evaluate the whole ways and means of getting at this problem. I notice you suggested, or I think you suggested, that probably the Public Health Service or the National Institute of Health might have something to do with making these larger X-ray pictures which would, you think, ascertain the existence of silicosis in its early stages. Now, tell me in just what way you had in mind that the United States Public Health Service or the National Institute of Health might help in that situation?

Dr. ENSIGN. Well, for a project which would be as expensive as this, I think the State board of health would nowhere near have the funds nor the personnel to do it.

Now, the National Institute of Health does have funds for this kind of research, and they also have personnel, which, even if the State board of health was able to obtain the amount of funds, I think there would be some duplication of effort, because we would have to obtain

the same personnel that the National Institute of Health has, so I think there would be a good deal of duplication.

I feel that the cost of the program of the X-rays alone, if they paid on the same basis that we have been negotiating for some clinics on Indian reservations—that's the only thing that I have to base it on—would cost something in the neighborhood of between fifty and eighty thousand dollars a year for the X-rays alone.

Mr. ELLIOTT. For this State?

Dr. ENSIGN. Yes, sir.

Mr. ELLIOTT. Well, now, is there a precedent in the Public Health Service for expending Federal funds for this or a similar purpose?

Dr. ENSIGN. Yes. I would think so. It was mentioned yesterday that they had heart and cancer and were doing research in some of that; in fact, we are at the present time using some of the heart funds, not the National Institute of Health, incidentally, but the Public Health Service, for doing some research in Montana in heart work; but I would think that they are the body which actually does the great amount of research work, and a lot of their patients, of course, are sent there to Bethesda, where they can do some of their research; but in cases where the majority of the cases where the work is in Bethesda, it would just have to be done someplace else, and it would have to be done in some State.

Mr. ELLIOTT. What you are saying now, I believe, is for experimental purposes the United States Public Health Service or the National Institutes of Health might make a grant to any State—Montana, for instance—that Montana might use to make these 14-by-17-inch films for evaluation to really get at this pneumoconiosus problem?

Dr. ENSIGN. I would prefer that they wouldn't make it to us. I would prefer that they would come into it themselves, because I think that we just don't have the staff at this time to go into all this, and they do have the staff, and I would say it would involve a good deal of duplication of effort, because they have staff already trained in research work, and we don't. We can hardly keep the work going that we are supposed to do.

Mr. ELLIOTT. You don't have the staff and probably couldn't get the staff with which to do that work?

Dr. ENSIGN. That's correct. It would take us several years if we had the money to accumulate the staff.

Mr. ELLIOTT. Well, your testimony has been very interesting, and I thank you for the forbearance you've shown me.

Mr. FJARE. I always like to know what I am talking about, and when I am talking about silicosis I don't know what I am talking about. Doctor, will you explain to me what is silicosis? Now, they call it a disease; is that correct?

Dr. ENSIGN. Yes. I would think so.

Mr. FJARE. It is a disease?

Dr. ENSIGN. That's right.

Mr. FJARE. Isn't it true that diseases involve germs or viruses of some type?

Dr. ENSIGN. I would say sometimes, but I don't think always.

Mr. FJARE. Not always?

Dr. ENSIGN. No. I don't think it's always.

Mr. FJARE. Can you explain to me in a layman's language just what transpires when a piece of silica or a number of pieces of silica gets into a man's lungs? What happens?

Dr. ENSIGN. Well, the particles of silica that enter the lungs that I think we are concerned with are very small particles, that is in the neighborhood of 1 to 3 microns, which there, again, comes down to a micron is about 1 one-thousandths of a millimeter, and those are the type of things that cause the damage.

There originally was some thought that these small, sharp particles that got into the lungs caused cutting and a fibrosis, but we found later that they do not actually cut, but it is the chemical reaction itself which causes the difficulty, because there is a certain—these form a silicic acid and this silicic acid itself is the thing that is harmful; and the body or the lung, the body, in order to protect itself, forms a coat, first, perhaps, the white blood cells and then later fiber—particles of fiber—or we call it fibrosis—but they are that kind of tough, elastic tissue which probably is similar to what you have seen in tendons that began to encapsulate these silica particles—encapsulate—that is, surround—these particles.

When the lung has enough of these encapsulated areas, they begin to infringe upon the lung tissue and there are also other fibrotic strands that go through the lungs and in and out and join these places together, and so that interferes with the person's ability to breath; and, as it interferes with his ability to breathe he uses up his reserve. I mean, we know ordinarily that persons can get along pretty well with a half a lung, if they need to, they have that much reserve, but in this it is used up so much of the reserve element of the lung that it becomes difficult to breathe. At first, it would show up upon exertion—he didn't walk as fast as he did, or something of the sort; and there would also be a little cough due to the irritation. This would be the first stage.

The second stage: This process has increased until he is somewhat incapacitated and his breathing is even more difficult and the cough becomes fairly chronic.

And, as the process goes on—as more silica gets into the lung—the person has so much difficulty in breathing that he begins to really exert on every breath and we get what is called an emphysemia—his chest gets, we say, barrel chested—a great big chest on him because the muscles in there are all working to help him breathe, and because of that, the right side of the heart that has to pump the blood to the lungs also has to work harder and it becomes enlarged.

In the third stages we have cardiac decompensation and complete inability to work.

Mr. FJARE. I want to thank you. That's a very complete and clear description. Now, it has been testified and I want it for the record from authority and a medical man that there is no corrective means or cure possible, is that what I'm to understand? Is there anything the medical profession can do?

Dr. ENSIGN. The only thing we can recommend is that when a person begins to get this in the early stages, that is that he gets away from that particular occupation.

Mr. FJARE. In other words, once you've got silicosis, you've got it forever?

Dr. ENSIGN. Yes. But, if it can be picked up early enough and that's why the State board of health is particularly interested, if it can be picked up early enough, the patient can be advised to change occupations or to get out of that kind of a thing, and probably he will live as long as anyone else.

Mr. FJARE. Now, we have been briefed and given numerous pieces of information regarding safety and dust control in mines and so forth. We have been informed of a threshold, I think they call it, where so many particles of dust and silica is allowable in a cubic foot of air. Now, in your professional opinion is there a threshold or the fact that you breathe any silica at all, is that damaging or do you have to constantly breathe a given amount before you get silicosis?

Dr. ENSIGN. Well, I think it would be a given amount, although people do have individual differences. All of us do.

Mr. FJARE. You mean one man is different from another as far as being susceptible to silicosis, is that correct?

Dr. ENSIGN. Yes. I think that two persons might work side by side and one would get silicosis and the other one—in a few months—and the other one might not develop it in 20 years, but the only way we can do is to find and to check these early symptoms, both by X-ray and by physical examination, and if we can get it either way, I think, perhaps, we should—at least with our present knowledge of it, which isn't too great—with our present knowledge the best thing we can do is to advise him to change occupations.

Mr. FJARE. Would you say then that the only possible way to avoid silicosis in a mine is to completely eliminate silica particles in the air?

Dr. ENSIGN. No. I wouldn't say that. We do have this maximum allowable concentration, and so far as we know it is the best thing that we have to go on, but it changes occasionally and I am certain that none of us feel that it is set or stable. It is something that we are aiming at at the present time. However, I did say in my statement that if we could have this study with X-rays and clinical examinations, that it would help us and it would help management to determine if the measures they are now taking are really satisfactory in preventing silicosis rather than the maximum allowable concentration, because I think that does vary.

Mr. FJARE. Now, let's get down to the study. Just exactly what would you propose be done by legislation or by other means we should be successful in having the United States Public Health Service come in and make surveys and investigations of this problem and its possible solutions? Would you suggest that the Public Health Service come in here into Butte and into like mining areas and examine each and every miner to determine what's happening, what's going on, is that the idea, is that what you mean by research?

Dr. ENSIGN. That would be the idea; and you would also check the mines, check the mines and find out how much silica was actually going on at various times and various places; and at certain places where management feels that they have reduced this below the maximum allowable concentration, the men in there could actually be checked as a check on this maximum allowable concentration to find out if it itself is what we should have and what percentage of it may be developing. I think because of the individual variation it would be a very difficult thing to do, and it may be that we would have to say

that this kind of a thing may have to keep up, but they would at least give us some basis to keep it up on. If, at the present time, we would start in we would have no idea of how much to keep up or how much had to be done. With the research they could do that.

I think it would be both an X-ray and a physical examination with a history of clinical symptoms. I don't think that we can do it with just one, because I am sure that the radiologists will tell us that they cannot understand silicosis because one person shows all of this and he doesn't have anything, and another one doesn't show anything and he has a lot of it comparatively—I should say comparatively he has a lot of it; so I think you will have to take it from the clinical side and the X-ray side, both.

Mr. FJARE. Are you aware of any activity on the part of the mining industry as such of entering into this field of research on their own?

Dr. ENSIGN. I don't know of any. It may be done. I mean, I know some has been done. Could I ask my industrial hygiene engineer this question and see if he knows? He may know a lot more about it than I do.

Mr. METCALF. Surely. This is an informal procedure, and we are after information.

Mr. FJARE. I want to know whether the mining industry, from your point of view personally as a professional man regarding health if you are aware of or know of any part being played by the mining industry itself in the field of research in trying to solve this extremely hazardous problem.

Dr. ENSIGN. I don't know, as it is an engineering problem, and Mr. Wake, our engineer, might be able to answer it better for you.

Mr. FJARE. Will you do it either way? You can consult with your assistant or he can answer?

Mr. METCALF. Will you give your name for the record?

Mr. WAKE. My name is Ben Wake, industrial hygiene engineer of the State board of health, and in relation to your question I don't know of anything that is being done; however, it very well may be.

Mr. FJARE. My reason for asking that question is because day before yesterday we were exposed to a great deal of information on the part of the Anaconda Co. and their laboratory here; and they had very extensive charts and lists of figures and statistics, and I am wondering from where they obtained those. Whether they come from actual research performed by the industry itself or they obtained these facts and figures and statistics for the Health Service or just from what source they came. Now, undoubtedly, perhaps, you can't answer that; but that, of course, is what prompted my question in the first place. I am wondering if the Public Health Service is working, perhaps in cooperation with or even not aware of an activity on the part of industry to solve this problem within their ranks.

Mr. WAKE. I don't know. That may very well be.

Mr. FJARE. Well, I guess that is all.

Mr. METCALF. Well, I want to compliment you on an excellent statement, Dr. Ensign. The point is that in spite of the fact that you have some of this information and these charts that you have presented to the committee show the prevalence of tuberculosis in certain counties, you can't positively state whether it is the result of silicosis or something else; can you?

Dr. ENSIGN. No. I think that the preponderance of opinion would be that it is.

Mr. METCALF. But the whole point is that we just don't have sufficient information and haven't had sufficient investigation to really determine these things?

Dr. ENSIGN. I think that's quite right.

Mr. METCALF. And, perhaps, we have also already brought out here that there is an insufficient interchange of information, so that we know the national scope of the effect of silicosis and other like diseases. Now, the legislation that this committee is studying, from the proposals that are before this committee, suggest that there be national mine inspection, largely for informational purposes, and proposes that after such inspection that the Secretary of Interior prepare and disseminate reports, studies, statistics, and other educational materials pertaining to the protection and advancement of health and safety in the metallic and nonmetallic mines and quarries and to the prevention or relief of accident or occupational diseases therein.

Now, do you think that if there were such inspection, annually, on a national basis, and the preparation and dissemination of such reports it would help in our attack on silicosis?

Dr. ENSIGN. I am sure it would help. I just wish we could get more medical opinion on it, too. In addition to the inspections I would like to have more medical opinion from clinical examinations and X-ray studies.

Mr. METCALF. You would like to have the X-ray examinations such as you suggested by the National Institutes of Health?

Dr. ENSIGN. Plus the clinical studies, which really should accompany it.

Mr. FJARE. In drawing up the figures on tubercular incidence in these different counties, were those persons identified as miners specifically? Or did you just take all of the population?

Dr. ENSIGN. There was no one that we identified as miners. We don't even have that information.

Mr. FJARE. Would there be anything in addition to your professional medical opinion, would there be any other conditions other than silicosis in the mining profession that may cause a man to be more susceptible to tuberculosis?

Dr. ENSIGN. Well, I would expect—yes—I hate to answer definitely. The fact that a person is subject to such radical changes of temperature.

Mr. FJARE. Well, now, that was what I had in my mind when I asked the question. I remember being in the mine yesterday where I came from those hot depths perspiring as freely as I possibly could and immediately was put into an area where it was drafty. I have had tuberculosis myself at one time and I have a weak lung condition as a result of it—slightly weak, at least—and I am susceptible to drafts and so forth and catch cold easily and so forth and I am wondering if that condition—that rapid change of temperature condition would also be a contributing factor to the susceptibility of tuberculosis?

Dr. ENSIGN. I would hate to say definitely, but I believe it is possible.

Mr. FJARE. It is possible?

Mr. ENSIGN. It is possible, and maybe even probable, that it is a contributing factor.

Mr. FJARE. That's all.

Mr. METCALF. Thank you, Dr. Ensign, for some very helpful testimony. The statement that you presented, the two maps, and also a table of newly reported cases of tuberculosis for 1951 to 1955, will be incorporated in the record as a part of your statement, unless there is objection.

(The two maps previously shown in this record are on pp. 159 and 160. The table spoken of above will be found on p. 406.)

Mr. METCALF. It was previously announced that at 10 we were going to start to hear witnesses from the Mining Association of Montana. The first witness whose name has been given me is Mr. John Bley, manager of the American Chrome Co. and vice president of the Montana Mining Association. Mr. Bley.

We are very glad to have you with us. I notice you have a very interesting and important statement, and, if you will, identify yourself for the reporters and proceed and give your testimony in any way you see fit.

STATEMENT OF JOHN BLEY, GENERAL MANAGER, AMERICAN CHROME CO., NYE, MONT., AND VICE PRESIDENT OF MONTANA MINING ASSOCIATION

Mr. BLEY. My name is John Bley. I am general manager of the American Chrome Co., at Nye, Mont.

Mr. ELLIOTT. What town in Montana was that?

Mr. BLEY. Nye—N-y-e. I appreciate the privilege of testifying before the House Subcommittee on Mine Safety, and I extend a sincere welcome to the members of the subcommittee.

My company has always recognized its responsibility toward its employees and has, accordingly, conducted itself toward a goal of providing reasonably safe working conditions.

We are relatively a new operation in the State of Montana, and also consider ourselves a small operation. We mine and mill 900 tons per day, producing 380 tons of concentrate with a crew of 255 men.

We started on our operations August 10, 1953. We are situated in the midst of an agricultural district. We realized immediately that many of our employees would not be familiar with industrial or mine operations. Therefore, we knew we had the problem of educating the new employees and training them to recognize and avoid hazards peculiar to the mining industry.

We also knew that many of our new employees had never been exposed to any sort of safety program.

We have prepared a report which covers our entire accident-prevention program, but, because of limited time, I will not go through this report.

Mr. METCALF. Mr. Bley, do you want that report incorporated into the record?

Mr. BLEY. If the committee wishes that report, they may have a copy of it.

Mr. METCALF. We would like to have a copy of it.

Mr. BLEY. I have 3 copies of it here, or you can have 1—whichever you desire.

Before I proceed with the brief outline, I want to compliment our union for the fine cooperation they have given our program. Without their help we would not have been able to achieve the conditions that are now prevalent at our operation.

Also, I wish to compliment our supervisors, who have been vigilant and who have done an excellent job. All of this has been under the very competent leadership of our very able full-time safety and ventilation engineer.

It is only through working together at the grassroots level that we can ever obtain the desired results of improving working conditions.

At our operation we have only started to work; our aim is directed toward further improvement.

Now, the brief outline of our program: First of all, we have a company-union safety committee. We have 2 of those, 1 for the mines and 1 for the surface operations. This committee is composed of 3 company members and 3 union members. They meet at least once a month, and during this meeting they review previous suggestions, instructions, new suggestions and discussion, and have discussions of the safety manual.

Now, the safety committee is also instructed that they are to accept safety suggestions from the employees at any time that they are made. They, in turn, are obligated to either inform the safety engineer or their immediate supervisor. The safety engineer or the supervisor initiate immediate correction.

Going to our next step: There are meetings with the shift bosses. Each crew member, under the direction of a shift boss, has a meeting once a month. During this time they read and discuss the parts of the safety manual, have a period of instruction or a land demonstration; and also at this time suggestions are brought up and discussions.

In the third phase of our program are department safety meetings. These are the department heads or the supervisors of the various departments in our mine organization. At this level there is a review of records, injuries, and suggestions, new suggestions, and discussions, the topic of the month—an example, falling rocks may be a problem in one particular month, and that will be discussed quite thoroughly, or the biggest worry, complacency, is always brought before the committee; and also at this level there is instruction.

On the fourth phase the department heads meet each month with the general manager. Also at this time is a review of the records, the topic of the month, discussion, and instructions.

In addition to those, the safety and ventilation engineer is also responsible for ventilation. This is continually checked. A complete survey is made the first 2 weeks of each quarter, maps and charts are kept up to date, and a complete report made of his findings.

In addition to that our diesel locomotives are checked weekly. Other tests and inspections include ambulance inspection, resuscitators, inhalers, first-aid cabinets, cargoes (?), and other safety committees.

In addition to that the doctor and the safety engineer make a complete health inspection each month. This includes stores, cafe, messhalls, bunkhouses, showers, toilets, water supply, septic tanks, and such other places as may, from time to time, appear necessary.

Now, to show that this program has been effective we have statistics that we have kept from the date that we started our operations. In 1953 our frequency rate was 173. In 1954 it was reduced to 86. In 1955 it was reduced to 48. In 1956 it was reduced, to date, to 30.3. Likewise, the severity over the same years was 9.2, 23.2, 1.5, and 0.8.

In addition to that we have departments at our operation that have never suffered a lost-time accident since we started operations. Our mill department has gone 568 days without a lost-time accident.

In the surface department the plumbers, painters, carpenters, and laborers have gone 1,120 days without a lost-time accident at one of the camps.

At the lower camp the plumbers have gone 1,120 days; painters, 349; carpenters, 586; laborers, 215.

The mine department, up to September 15 has gone 115 days without a lost-time accident. The mechanical-electrical department—the mechanical portion of it—has gone 223 days without a lost-time accident; the electrical, 830; transportation, 410; the tram, 949.

In closing, I will state that the company has a legal and moral responsibility to promote reasonably safe working conditions for its employees. In addition, the company, in my opinion, also has the responsibility of improving upon the employees the great need for the individual development of constant safety consciousness, which automatically builds safe work habits.

Unsafe conditions are much easier to correct than unsafe acts, because unsafe conditions can be corrected by such things as providing a guard for a piece of equipment, lighting of stairways or mending a broken step, or installing ventilation units, while unsafe acts stem from a lack of safety awareness of individual people or a lack of concentration on what they are doing.

The safer a job is made, the more danger of an employee becoming complacent, resulting in foregtting to think and eventually an injury.

No amount of Federal legislation or control can cause individuals to cooperate and think to the elimination of accidents. Safety can only be achieved as each individual wants it. This, of course, means that wholehearted cooperation is required from each individual to follow established practices and rules and to continually participate and provide practical suggestions to improve conditions. These conditions can only be attained if the participants have the right attitude and by providing good, sound leadership at the grassroots level.

Only through mutual trust between an employer and an employee can a safety and health program reach the desired end result, that is, reduced further the current accident frequency, reduced suffering, and reduce loss of individual income.

It appears to me that Federal control is not the answer. Conditions vary from mine to mine, State to State, and problems can only be solved at the local level by local individuals who are thoroughly familiar with conditions and problems. These conditions can only be appraised by the individual who is qualified by experience, education, and training and is definitely impartial.

Our present framework in the State for a sound safety program now exists. In addition to that, at the local level, there are company-union committees that have equal responsibility to provide safe work-

ing conditions and to help follow the established practices and rules that have been set up for each particular operation.

That's all I have.

Mr. METCALF. Thank you, Mr. Bley.

Congressman Elliott.

Mr. ELLIOTT. Mr. Bley, I was impressed with what you said about the necessity of keeping and continuing the functioning and effective relationship between the union committee and the management committee at the local level, and I agree that through that means much can be done to facilitate safe conditions around a mining operation. I was also impressed with what you said about the fact that you have a State program that is an effective program onto which you can tie these local efforts; and I for one wouldn't want to do anything that would minimize in the slightest effort at the mine level that you have mentioned or the effort at the State level; but now I am wondering—I am going a step further—and I am wondering whether or not it wouldn't be very helpful to the mining industry if you did have at least some form of statistics kept on a national basis that would give you some comparative scores by which to evaluate the effort that you are making on the local level? I've got an impression from these hearings here that there is a great deficiency in figures or statistics as to accidents and accident rates and comparisons and up-to-date figures so far as the whole mining industry is concerned; but I gather from your statement that you don't think the Government ought to get into the safety field that pertains to the mines; is that correct?

Mr. BLEY. Yes, thats' right. In regard to supplying records, we do supply records to the Bureau of Mines once a year, which lists our accidents, the days lost, and certain other information and questions that they ask that I don't recall. We submit that each year. Now, what they do with that I am not familiar.

Mr. ELLIOTT. The submission of that is purely on a voluntary basis, is it not?

Mr. BLEY. I believe that's true. We compare ours with the National Safety Council. I believe the frequency for the National Safety Council—the average—over the years is 30.3, and, I believe, the severity was around 5; so our record is very close to the frequency and much below the severity.

Mr. ELLIOTT. You have gotten your accident rate down to the national average frequency rate, according to the information that you get from the National Safety Council?

Mr. BLEY. Yes, and nearly five times lower than the national severity average over the last——

Mr. ELLIOTT. Well, it sounds as if you have done a very excellent job on the local level in promoting accident prevention and safety generally. Would you think that the fact that you have a relatively small operation might contribute to the effectiveness of your safety program? To state the question another way: Could a large concern, operating many mines, such as the Anaconda, operate a program that is as detailed and as supervised as you have pointed out with respect to your own program?

Mr. BLEY. Yes. I do, and in many instances, I believe, they do much more than we do.

Mr. ELLIOTT. Well, now, do you think that it would be well for the Government to have an Industrial Disease Institute in the National

Institutes of Health to carry on continuing experimentation in the field of industrial diseases, such as silicosis?

Mr. BLEY. To carry on experimental work and research?

Mr. ELLIOTT. Yes.

Mr. BLEY. It would probably be all right.

Mr. ELLIOTT. Well, do you think that there is a need for that?

Mr. BLEY. In my own instance, I'd say "no." In our instance, we provide the working conditions to eliminate those hazards.

Mr. ELLIOTT. That is all.

Mr. FJARE. Mr. Bley, your safety record at your particular operation is something to be proud of. The mining operation you perform at Nye—would you say that is a particularly safe type of mining? Would you explain to the committee and to me just what type of mining this chrome operation is there?

Mr. BLEY. It's an underground operation. We enter the mine through portals. We have the customary numbers of raises and stopes, and, in my opinion, it is much safer to work in the mine than it is to walk across the street in any town.

Mr. FJARE. Do you have to timber up and shore up your ground?

Mr. BLEY. Very little.

Mr. FJARE. Very little?

Mr. BLEY. We use what we call the shrinkage method of stoping: They blast the ore and, of course, it is broken; we draw out sufficient broken ore to leave a working area of about 7 feet from the muck pile to the back, and the back is no further than 7 to 10 feet away at any one time and the men can easily reach it and scale it down or do any other safety precautions they need to do. The broken material is not removed from the stope until it is completely mined, and then nobody enters it after they have mined it.

Mr. FJARE. Do you have a high silica content in the ore?

Mr. BLEY. Our silica content is in tight combination with other minerals or other elements, and the total, as far as free silica is concerned, we have very little.

Mr. FJARE. What type of—how are your miners handled? Do they do contract work like is performed here in Butte?

Mr. BLEY. Yes. Some of them. We have men on bonus.

Mr. FJARE. That's on a contract basis?

Mr. BLEY. On a bonus system—we call it a bonus system.

Mr. FJARE. All of them are under that?

Mr. BLEY. Anybody that wants to participate underground is.

Mr. FJARE. Do you have some day's-pay men?

Mr. BLEY. Regular day's-pay men. Fifty percent of our crew is on bonus, of our mine crew.

Mr. FJARE. Do you find a marked difference in injuries between the two types of workers?

Mr. BLEY. No.

Mr. FJARE. Not a bit?

Mr. BLEY. No.

Mr. FJARE. That is all.

Mr. ELLIOTT. Have you had any indications of silicosis since you started your operations?

Mr. BLEY. None whatsoever.

Mr. ELLIOTT. And no pneumoconiosus?

Mr. BLEY. No.

Mr. FJARE. One more question here: Does your operation carry on any type of a physical examination when you hire a man?

Mr. BLEY. Yes.

Mr. FJARE. Do you test him to see——

Mr. BLEY. Yes.

Mr. FJARE. Do you examine him to see if he has silicosis when he arrives, perhaps?

Mr. BLEY. Yes; we give them a complete physical when they come on the job and that has just been inaugurated recently.

Mr. FJARE. You do that with every man you hire?

Mr. BLEY. Yes.

Mr. FJARE. Do you, in addition to testing or determining his physical condition, do you also test him psychologically, shall we say, to find out if he is accident prone?

Mr. BLEY. No; we don't.

Mr. FJARE. You don't. Now, the reason I ask that—go ahead?

Mr. BLEY. I will go a little further on that. An accident-prone case is when a man proceeds beyond his third accident, regardless of what it is, scratches, or no lost time involved, we bring him in for discussion and talk to him and see what his attitude is and try to adjust his attitude to improve his work habits.

Mr. FJARE. If I were to be a miner—say I have been a miner and working in Arizona and I come to your plant, you do not check into my past accident record—is that correct?

Mr. BLEY. No.

Mr. FJARE. You do not. Wouldn't that be, perhaps, a good idea on the part of management, to check the accident habits of a worker? Now, the reason I ask that or the reason I say that from my two experiences in going into the mines yesterday and the day before, I didn't have to go very far before it became obvious to me that that would be no place for me to work. I'm the type of guy, that, if I go to get my suitcase out of my trunk in the car, I bark my knuckles every time. Now, I'm accident prone. I know I am. I'm careless. I wouldn't dare work in a mine because I know I wouldn't work there very long before I became hurt, and I know there are other people like me, and I know that there are people who are habitually and characteristically safe. I wonder if it wouldn't be a wise thing on the part of management to check into these habits of a man, if he has a record of his habits, perhaps it wouldn't be wise to have sufficient staff on your members of your staff to check this trait of a man?

Mr. BLEY. Well, that would be quite a problem, and then it has been our experience, too, that if a man has had bad luck at one place, it doesn't always necessarily carry to the next.

Mr. FJARE. Well, of course, I understand that. I don't mean that.

Mr. BLEY. And usually by a number of small accidents to an individual, we can begin to tell how he's going to react in our operations; and from that we bring him in and talk to him to observe his attitude, and from that we have to determine whether we want to continue with him or suggest he seek employment elsewhere.

Mr. FJARE. That's all.

Mr. METCALF. Mr. Bley, you suggested that you didn't think that Federal control was the answer. I believe that all members of this committee would resist any Federal control of mining operations; however, you are, at the present time, on a voluntary basis submitting

to the Bureau of Mines a report of your—an annual report of your accidents?

Mr. BLEY. Yes.

Mr. METCALF. Now, would you feel that you would resist any attempt to have an annual Federal mine inspection without compulsion or control?

Mr. BLEY. Without what?

Mr. METCALF. Without compulsion or control?

Mr. BLEY. Well, that all depends on the individual that comes around and in what light it would be handled?

Mr. METCALF. All right, we understand that, but we are going to have——

Mr. BLEY. The man has to be competent. He has to have the education and he has to have the experience and the background and he also has to have the training. In addition to that, is he thoroughly familiar with all local problems?

Mr. METCALF. Now, undoubtedly, you have had some sort of communication and some sort of relationship with the present employees of Federal Bureau of Mines?

Mr. BLEY. That's right.

Mr. METCALF. And the type of employee that the Bureau of Mines now contains, and if they continued to maintain and expand their staff to have other employees of that type, would you resist an annual mine inspection?

Mr. BLEY. Those that I have dealt with from the Bureau of Mines have been satisfactory to me.

Mr. METCALF. Yes. Now, I know the answer to this question, but I want to get it in the record: Have you ever, yourself, or to your knowledge, ever heard of anyone in the Montana Mining Association denying access to a mine in Montana to any Federal employee of the Bureau of Mines?

Mr. BLEY. I have never heard of it.

Mr. METCALF. No. One of the provisions of this bill is to provide that— to require that there be an opportunity for inspection. I take great pleasure in putting into the record at this point that there is no such requirement of requiring the Federal Government to inspect or permitting them to inspect against the will of any miner, but not only has my experience been that the Montana Mining Association has always cooperated, but the experience of this subcommittee has been—and not only the members of the Montana Mining Association but the Anaconda Co., which is not a member—have cooperated fully in working with the subcommittee and have given us their time, and I know that we have impaired production, both in the mines we visited and have had very important officials here to testify, and I want to thank you for that.

Now, this proposed legislation merely provides that there shall be an annual inspection, an inspection after a mine disaster, and periodic reports. At least, that's how the legislation applies to the mines and mining operators.

Now, I would like to go into, a little bit more, your response to the question that Congressman Elliott asked: Don't you think that there would be some advantage to you in your operation, if, as a result of national mine inspection, you could have the benefit of reports of other mining operators and operations throughout the country?

Mr. BLEY. For comparison purposes, you mean?

Mr. METCALF. For comparison purposes and to——

Mr. BLEY. In other words, just to see how we are doing?

Mr. METCALF. And to see how other mining operations have met problems which you are confronted with in your operations?

Mr. BLEY. Well, we have always exchanged information among the miners.

Mr. METCALF. I understand that, and the National Safety Council, for instance, is a voluntary organization?

Mr. BLEY. We've always done that; and also by visits to individual mines—we gather our information in that way and exchange.

Mr. METCALF. And you feel that that's sufficient, without any further organized national effort by the Federal Government?

Mr. BLEY. I believe that the information that we get is sufficient and furnishes us with the things that we need. We have to keep alert these days to keep up with the latest advancements.

Mr. METCALF. Well, that's what I wanted to know—your opinion—and I know that you are speaking for some of your colleagues in the mining association. I think that is all unless there are other questions.

Mr. FJARE. Just one more: Do you, in your negotiations with the union to which your employees belong, do you consider into the terms of your contract, working conditions, safety provisions, and so forth, or is it strictly wages?

Mr. BLEY. Well, we discuss working conditions.

Mr. FJARE. Is it a part of the contract?

Mr. BLEY. Yes; it's a subject to work through the previous procedure——

Mr. FJARE. Is it a specific part of the contract, so that, if you, as management, should violate some safety provisions, you are in effect breaking the contract?

Mr. BLEY. No; there is nothing like that.

Mr. FJARE. Not as firm as that?

Mr. BLEY. No.

Mr. FJARE. Merely a verbal agreement or a gentleman's agreement?

Mr. BLEY. No, it provides for a safety committee for the mine and for the surface and it defines what that safety committee is and that they are to meet once a month and submit their recommendations to management, and management is to act on them and give them back what's happened to their suggestions.

Mr. FJARE. Does your mine include ventilation?

Mr. BLEY. Yes.

Mr. FJARE. Do you have ventilation facilities for your mine?

Mr. BLEY. Yes, we do.

Mr. FJARE. In other words, the union does not demand in its negotiations with you that the mine be ventilated—they just know that it is and assume that it is going to stay that way; is that correct?

Mr. BLEY. However, if a particular section of the mine isn't properly ventilated they take it up with their safety committee and ask that we look into it and take whatever measures that are to be done. We look into it and take whatever steps that are necessary.

Mr. FJARE. Are you enjoying very good labor relations with your operation?

Mr. BLEY. Yes.

Mr. FJARE. That's all.

Mr. METCALF. Thank you, Mr. Bley, and thank you for coming here and submitting very informative and impressive testimony.

Unless there is objection, the report that you submitted will be made a part of the file of the committee for reference by the committee, but will not be incorporated into the printed report.

The committee will be in order. The next witness is Mr. Fred Burnett the president of the mining association. Mr. Burnett, we are very glad to have you with us. You may come forward and tell us your name, address, and what you do.

STATEMENT OF FRED BURNETT, SUPERINTENDENT, MONTANA PHOSPHATE CO., AND PRESIDENT, MONTANA MINING ASSOCIATION

Mr. BURNETT. My name is Fred Burnett. I am the superintendent of the Montana Phosphate Co. who are operating phosphate mines some 50 miles north of us. I have no prepared statement as such, but I would like to talk to the committee and tell them something about our approach to safety and safety-program operations.

Our operations consist of at the moment—we have 1 underground mine producing ore, 2 underground mines under development and a strip operation, open pit operation on the surface which is of medium size.

Our total payroll in men under normal operations would run on the average of 250. Now that includes the men under our direct payroll and in addition to that there are probably 50 men working immediately in our operations in trucking some of the strip operations that I mentioned, so that our overall total is around 300 men. We very definitely are in the small-mines classification and consider ourselves as such.

We have had a safety program for many years. The first most important point or the starting point of any such program is the statistics. We have developed a system of statistics which we use locally to guide us and show us how we are doing.

Very briefly, we report our loss-time accidents in thousand of shifts work. For example, a frequency of one would mean that we had one accident per thousand shifts worked. Some 10 years ago our accident frequency was in that neighborhood, 20.9 to 1. Our safety program was instituted and through the years the frequency was gradually reduced until 1954 we went down to 0.22 which meant in effect that we had 1 accident for possibly every 5,000 man shifts worked.

In 1954 we started some new construction and hired some new men and our accident rate started to climb slightly, it got into 0.3. We decided that something had to be done as we wanted to correct that condition so we appointed a full-time safety officer which we had not had in the past. This full-time safety officer his duties very briefly concerned primarily first with new employees. Every new man that comes on the job is interviewed by the safety officer; some record made of his past experience, his accident record is discussed with the safety officer and he is informed of our rules and regulations and given a pamphlet of regulations for his own use, issued with necessary safety

equipment and placed underground in the care of a shift boss and partner. If he is a new man and the first time underground the shift boss is informed of that and makes a point of contacting that man frequently to see that he is obeying safety rules and understands the safety regulations in our mine.

In addition the safety engineer makes regular inspection trips of all our workings. I would say that on the arevage he sees every working place twice a month and sometimes three times a month. He usually travels with the foreman or one of the other supervisors and any unsafe conditions that they may find at the time can be reported and action can be started immediately to correct them. Of course as they go into each working place they will discuss the safety with the men right on the job and any suggestions that come from the workmen are considered right on the spot and discussed with both supervisors and the workmen. In addition to that we have a union safety committee which has been functioning now for nearly 2 years. It is composed of 2 members of the union and 2 members of the supervisory staff who meet formally once a month. In addition to that we have an agreement with the union that at any time during the month we meet informally to discuss the safety rules or regulations or safety infractions or unsafe conditions underground.

This union safety committee functions very well, excellently, and we get some good suggestions and I believe in every case everyone is satisfied that corrective measures are taken.

In conjunction with these daily periodic visits of the safety engineer we find that most of the unsafe conditions come up right on the spot and they are discussed underground. The last 2 or 3 safety meetings of the joint committee we have had very little to discuss because as it turns out most of the conditions have been taken care of and discussed prior to the formal meeting. However, we do continue with the meetings.

As a result of all this program we believe we have reversed that slight upward trend in our frequency and it is again dropping down to below the 0.3 which we had before.

That in a nutshell is the way we operate our safety program and we consider it as very definitely a local thing, that is local to the extent that it should be discussed with the men on the job down in the working place. Our whole theory of safety is based on that thought.

I would like to say a few words about our ventilation. We are fortunate in some underground mines in that we are on hillsides which allow exits and entrances at different elevations which give us a strong natural flow of air during most of the summer season. We have introduced mechanical fans on all levels so that during the wintertime when the temperatures are equalized and the natural flow may slacken the mechanical fans take over and we maintain this uniform flow of air through the workings at all times.

We are again fortunate in that we have many openings above and we have no recirculating airload to speak of. In other words, the air that comes into the mine passes through the mine and carries any contaminants with it.

In headings that are being driven at the extremities of the ore bodies those openings of course haven't been established as yet so we install mechanical fans and venture which are running continuously

until such time as the breakthrough is established and the natural course of air or natural and forced current of air can be maintained.

Now, phosphate ore—the reports of our phosphate ore is that it contains a very low percentage of free silica in the order of possibly 5 percent. However, we proceed on the assumption that any dust is bad—or at least not good—and we try to maintain the workings in as dust-free condition as we can at all times. Of course, all drilling is done wet, we use water there; and in these extremities—development headings of the extremities of the ore the men wet down all the broken rock before they start work, and incidentally the silica count on these development headings is slightly higher, in fact it is considerably higher than it is in the ore so we are anxious and take pains to try and keep dust in that area to a minimum.

In addition to the dust our safety engineer makes periodic and regular tests for other gases which may be present such as methane, carbon monoxide, and whenever—we never found methane to my knowledge and very little CO and when it is discovered we try to remedy the condition. We don't try, we do remedy the condition.

One of the great producers of dust underground we feel is our blasting cycle so our operations are arranged so most of the blasting is done at the end of the shift and the men are taken up from the mine, and then there is a 2-hour period on 1 shift and a 4-hour period on the second shift while there is no one underground working. That allows time for the dust-laden air to be removed from the workings before the new shift comes on.

Temperatures underground are uniform, they are around 50°, so that we have no problems of high temperatures and do not need any expensive or elaborate conditioning equipment.

Our operations are visited regularly by the State inspector and occasionally by the Bureau of Mines people in the Geological Survey. Our thought in our safety program as I said before is to maintain it at its local level right in the working place itself. We feel that the men in the working places and the supervisors who visit that working place every day are best qualified to tell whether that it is unsafe or safe, and on that basis we think our program has been reasonably successful.

That I think very briefly is our thoughts and actions and some of our thoughts on safety.

One thing about statistics. We are not or don't pay too much attention as to how our operations compare with the national averages or other mines because we feel that safety statistics, no matter what they are unless they are zero zero, are on the high side, and this question of complacency is one that we are fighting all the time. We have numerous ideas and contests and various schemes to keep fellows interested in it and safety conscious, and there is a tendency if you set up a standard, say an average for the country, and if you are below that standard, why then everyone says that you have a good safe mine. I think that is not necessarily so as our mine is not safe until all accidents are eliminated. That of course is most difficult to do but we feel that the lowering that has been going on over the last 10 years has not yet reached its limit as yet as we will go a great deal further than we have, and under our present program we believe that certainly if results are as comparable in the future as they have been in the past we will continue and attain that goal.

Mr. METCALF. Does that complete your statement, Mr. Burnett?

Mr. BURNETT. Yes.

Mr. METCALF. The gentleman from Alabama.

Mr. ELLIOTT. Mr. Burnett, would you have any objection if the United States Bureau of Mines come into your mine and inspect it once a year for the purposes set out in this bill which are—just quoting it roughly—"To obtain information about the health and safety conditions in your mine; the causes of accidents involving bodily injury or loss of life therein or the causes of occupational diseases originating therein so that it might then take the money that is made available to the Bureau of Mines for studies in promoting the health and welfare of working people and use that money in an effort to recommend procedures whereby occupational diseases might be eliminated or whereby accidents might be eliminated." Would you have any objection to that?

Mr. BURNETT. Certainly we welcome visits, we do welcome visits of the Bureau of Mines people for them to come and see us now.

Mr. ELLIOTT. They come to see you now?

Mr. BURNETT. Yes, they come to see us now and visit our premises at periodic intervals. It's a question of whether an inspection and a formal report by them on our operations would be of any value to us in question for this reason: Ore bodies and mining conditions vary tremendously. I do not think that there is one ore body in the world that is exactly similar to another ore body, and therefore working conditions are not similar. To start with now, in order to write rules of inspection for the whole United States I feel that the volume would be so voluminous to cover all the cases it just wouldn't be practical to do so. The other thing is that an inspector coming in might tend to compare your mine with other mines which have much more difficult conditions than you have or might have easier conditions. In other words, his comparison would not be valid unless it was supplemented by a great mass of detail describing conditions. I don't think it is practical for that type of report to be made.

Mr. ELLIOTT. Well, you may be right, Mr. Burnett, but my mind goes back to the fact that the same objections which you expressed were expressed with reference to coal-mine inspections years ago.

Mr. BURNETT. Yes.

Mr. ELLIOTT. And the result—well I don't know whether its entirely as a result of the inspection, but the increased awareness of accident causes and accident prevention has very greatly reduced the number of accidents in the coal mines in recent years just so much that it's almost unbelievable, and, of course, you have them ranging from the lignite mines through the hard coal mines of Pennsylvania you have every variety of circumstance which you mentioned that pertained to your hard coal or hard rock mines imaginable almost.

Mr. BURNETT. Well, in general I think that the coal deposits as sedimentary deposits are quite regular. The coal lies underground in seams of varying widths but the mining conditions of that flat-type body even if its pitched or tilted do not vary too much. Metal mines or nonferrous ores or even ferrous ores are highly irregular in shape. The masses, the long shoots and there might be veins and they might be quite regular but each one is a problem in itself and has to be mined by itself and has problems that are unique in one operation.

I believe, and speaking personally, in the metal mines that condition is far more prevalent than in the coal mines. You have certain uniformity.

Mr. ELLIOTT. I don't know enough about the ore mines to be able to answer that question, but we have before the Congress now——

Mr. BURNETT. Anything that would promote safety, we are for it. We have doubts that the suggestion would do that, but the very difficult task to come in and size up—I use the words "size up"—a mine operation in the matter of 3 or 4 days and write a report on safety conditions, I doubt whether the obvious things would be picked up. We believe we are getting the obvious things now through our unions, through our workmen and through ourselves.

Now, there has been a lot said about silicosis. Silicosis is very definitely a major concern to the mining people, and I think it is also a concern to other industries. The fact that you do have high silica counts in mines doesn't preclude the possibility of high silica counts, say, in a farmer harrowing and any technical industry dealing with silica products, and therefore the thought of saying that the mines primarily or entirely are responsible, I don't think that's correct. I think the approach should be or has to be much broader than that. I think it should be an attack on silicosis as a disease.

Mr. METCALF. I wonder if you gentlemen would yield.

Mr. ELLIOTT. Yes.

Mr. METCALF. Mr. Burnett, I think this committee is in entire accord with you and no member of this subcommittee and, as far as I know, no Member of Congress feels that silicosis is a problem that's solely in the mining industry. We are concerned here with legislation confronting mines and mine safety. The fact that perhaps it is more dangerous to cross the street in Washington, D. C., than to go down into a mine is entirely irrelevant. We hope that some other committee of Congress will take care of the proposition of the dangers on the highways but our immediate concern is taking care of the proposition of the dangerous conditions in the mines.

Mr. BURNETT. Now, that's my point, but the danger of comparison, you see, instead of comparing crossing the highway and a mine in my view the comparison of two mines is much the same thing because of the different conditions that exist in the individual mines.

Mr. ELLIOTT. Of course, there is one thing that you get from inspection from these outside fellows, a sense of objectivity that you can't get from your local groups or from any other source I think that you mentioned, and sometimes that's the greatest thing that can happen to a fellow is to have somebody with an objective viewpoint look over his business, whatever it might be.

Mr. BURNETT. Of course, we function that now through various safety organizations. A great deal of interchange of information and visiting goes on in the mines between operators of different properties. For example, in the last month in our very small operation we have had four visitors come through that were interested in various aspects of mining. I think the industry, through that way, plus the help of the Bureau of Mines, because they certainly are a great help in many things, and I think that is a great help in the approach to this problem.

Mr. ELLIOTT. Of course, if a fellow comes to your house as a visitor, he is not going to complain about the cooking.

Mr. BURNETT. That's correct. Although we have noticed that visitors, if they think their operations are a little better than ours, like to tell us, and we take that to heart, and within a week or so we will have somebody—well, within a short time—we will have somebody try to go and view his operations to see perhaps if he was shooting a line or whether he actually had something. That's one thing that perhaps is not too well understood outside of the mining industry—the very, very free exchange of information that goes on.

Some highly confidential information is passed on between operators. That is another thing about Federal reports and inspections, and made public, which should be made public. A lot of information we would give those people we would like to keep on a semiconfidential basis. The inherent nature of mining is a speculative thing, and there are certain possibilities that you have to keep to yourself, that you like to keep to yourself, until you have proved them or disproved them. In my mind, that's another thing Federal inspections and reports—you would have to be very careful what you told him or what information you gave him. You can tell him specifically it was not for the record, for publication, which would in effect defeat some of the purposes.

Mr. ELLIOTT. You think it would be a good idea to have an Institute on Mining Diseases in the National Institutes of Health?

Mr. BURNETT. Anything that would increase our knowledge about diseases, and so forth, in my opinion, is a very fine thing. That would be a fine thing.

Mr. ELLIOTT. We might find, as you have suggested, silicosis is more prevalent in other industries than it is in mining if we actually had the facts about it, which we do not have now.

Mr. BURNETT. In my opinion, that would be a good thing. It's obvious that if you know the causes of a thing, then you can apply remedies.

Mr. FJARE. Pursuing this inspection proposition a little more, would you tell me and the committee, for clarification purposes, what happens when a mining inspector comes to your mine, and what does he do, what does he look at, and what does he say when he is done?

Mr. BURNETT. Usually the first indication that we have a mine inspector around is that a car drives up to the property. We have no warning 80 percent of the time that he is arriving. He would ask to see some specific parts of our operation and might say, "I want to make a general tour with you." He isn't told; he tells us what he would like to see.

Mr. ELLIOTT. Under the terms of the law as it now exists, can you refuse him the right to enter your mine?

Mr. BURNETT. Not to my knowledge.

Mr. METCALF. I think the record should show that there is no compulsion for a Federal——

Mr. BURNETT. I was talking about the State inspector.

Mr. FJARE. A State inspector.

Mr. BURNETT. Yes.

Mr. FJARE. A State inspector, you cannot refuse him entrance to your mine?

Mr. BURNETT. The thought has never entered my mind. I am not sure whether you can or can't.

Mr. FJARE. He goes in the mine now?

Mr. BURNETT. He would in effect set his own program.

Mr. FJARE. You are talking about the State inspector now, are you?

Mr. BURNETT. Yes, sir.

Mr. ELLIOTT. I have reference to the Federal inspector.

Mr. BURNETT. The Federal inspection that we have now is on that basis. As the men arrive and call on us and ask us to go underground and if they want to see some specific thing we take them there and on occasions we have things that we want to show them. That has happened to us 2 or 3 times. On occasions I have called them and asked them to come over or suggest that the next time they are in that area they drop in; that we have something that we would like to have them see. Those are usually USGS men, Geological Survey men.

Phosphate, of course, is a formation and a lot of it is held under Federal leases and they have a great interest in that.

Mr. METCALF. I wonder if you gentlemen would yield.

I think the law is, at the present time is that when you are leasing from the Federal—leasing Federal land from the Bureau of Land Management that there is a requirement that you permit Federal inspection.

Mr. BURNETT. Yes, that is correct.

Mr. METCALF. That is only an exception to the general rule that there is now power to require Federal inspection by the Bureau of Mines on fee-held property. That's a theoretical matter, I have never known of anyone in the State of Montana refusing entrance, but you could.

Mr. FJARE. Real briefly, what is the purpose of Federal inspection, or Federal inspector coming to your mine. What is he there for?

Mr. BURNETT. The United States Geological Survey man, he is there to see that we are mining in a proper manner.

Mr. FJARE. By proper, what do you mean, safety?

Mr. BURNETT. Good extraction and that we are not mining in a wasteful manner and that we are getting the maximum extraction of the resources from underground; that we are mining in such a way that openings can be maintained for periods of times so that adjacent ground might be mined. In general he is interested in mining, and in addition to that, of course, he checks tonnage produced in certain areas and things of that sort, and he makes safety reports and recommendations.

Mr. FJARE. Is he more interested in the mining operations and what happens to the ore than he is in safety would you say?

Mr. BURNETT. I don't think he is more interested but I would say a greater proportion of his time.

Mr. FJARE. Of his time, yes.

Mr. BURNETT. Yes.

Mr. FJARE. Now when he has made his inspection he reports to whom?

Mr. BURNETT. I assume the Bureau of Land Management or the United States Geological Survey.

Mr. FJARE. Do you get a copy of it?

Mr. BURNETT. Not direct, no. If there are conditions that he thinks should be changed or corrected he will send us a letter.

Mr. FJARE. And he makes recommendations?

Mr. BURNETT. Oh, yes, he makes recommendations in a letter. Usually those recommendations are concerned with mine problems and boundaries and that sort of thing.

Mr. FJARE. Now, if he finds a serious dust condition in your shafts or drifts, does he bring that to your attention?

Mr. BURNETT. Yes, he certainly would. He would probably do that right on the job, and again stressing the local angle of the men right on the job, he would discuss it with them; and if in our opinion and the majority opinion he was correct, we institute corrections right away.

Mr. FJARE. Your safety committees and grievance committee and your laboring group, do they have an occasion to talk to the mining inspector?

Mr. BURNETT. Not normally, because the way he arrives we never know—I am talking about the State man now—we never know when they are coming so we can't set up a formal meeting.

In his travels through the mine, of course, he talks to the workingmen and on occasions has met with the union people; but generally, no, because he would run into the normal process of——

Mr. FJARE. If the union made their desires known that they would like to talk to him and meet with the mine inspector, would that be arranged?

Mr. BURNETT. Oh, yes, certainly it would. We would probably have to talk to him first to know what he wants to talk about, because obviously if we could settle it ourselves we would like to do it.

Mr. FJARE. There is no doubt about that.

Mr. BURNETT. But on occasions a hearing was requested for an inspection. In fact, I know they have. There were certain things they didn't like and they asked the State man to come out and look over, which he has done. We have followed his recommendations.

Mr. FJARE. Do the United States Bureau of Mines, who of course receive these reports no doubt—do they in turn make available to you methods of correcting the safety hazards or even improving mining conditions, and so forth? What does the Bureau of Mines render as a service to you as an independent and operator.

Mr. BURNETT. As a small operator we call on them for services such as this: Recently we purchased some diesel locomotives for use underground. That's the first time we have done that and we asked them to supply us with recommendations for manufacturers scrubbers to get rid of the gas and that sort of thing.

We have called on them for first-aid instruction to our men at times. They have sent instructions to give all our men or as many as we could persuade to take first-aid training.

Mr. FJARE. Is there available from the Bureau of Mines their complete analysis and report on safety conditions in the mining industry? In other words, let's assume that you have a particularly hazardous condition in your mine and let's say, for instance, that it is dust and you are buffaloed, you are stuck, and you don't know how to stop it and you can't get rid of it, can you appeal to the Bureau of Mines and will they give you help and assistance and recommendations?

Mr. BURNETT. I am not sure of the legality of such a move, but certainly we have never been refused in the past and we have done so and would do it again.

Mr. FJARE. I wasn't thinking or mentioning the legality of it.

Mr. BURNETT. We would do that as a matter of course, yes.

Mr. FJARE. Have you ever had an occasion to do so?

Mr. BURNETT. The only time that I can recall is the instance about these diesel locomotives, and we wanted their recommendations in that. I believe we did, yes, we did ask them for procedures for gas tests, these tests that I spoke tbout that the safety engineer was making, and we asked them to give the approved method and the course that they were using or would recommend.

Mr. FJARE. Does the phosphate mining industry specifically have a serious dust problem in its mines, generally speaking?

Mr. BURNETT. I would say "No"; it is not serious because the quantity of free silica is very low. The movement in our particular operations, which I am most familiar with, our ore is moist and it has 5 to 8 percent moisture contained in it so the dust in moving is not too serious a problem. Of other phosphate operations that I am familiar with the majority of them are open-pit operations in Idaho and of course the dust problem there doesn't exist.

Mr. FJARE. Well, now, whether the dust contains free silica or not that is still an uncomfortable hazard, working hazard isnt' it, just dust—I don't care what it is. I don't care what it is. I know I wouldn't want to work in it no matter what it was composed of.

Mr. BURNETT. That's right.

Mr. FJARE. Don't you constantly and continually try to eliminate the dust no matter what the content is?

Mr. BURNETT. That ventilation system that I spoke of that would keep that current of air continually going through, you see, it just automatically picks everything up. There is no recirculation so that we can keep fresh air going in continuously and coming out at the top or the bottom as the case may be, we automatically remove the greater proportion of that dust before it reaches serious concentrations.

Mr. FJARE. What was the name of this gadget we were looking at, microdine. Did you ever hear of such thing, microdine?

Mr. BURNETT. Is that a dust-testing machine?

Mr. FJARE. Did you ever hear of that?

Mr. BURNETT. I haven't heard of that word, but I am familiar with the dust-testing machines, various types.

Mr. FJARE. Do you know where it's being tested?

Mr. BURNETT. No; I don't. I didn't hear of that word.

Mr. FJARE. I asked you if you ever heard of a microdine and you guessed it as being a dust remover and that's what it is?

Mr. BURNETT. I haven't heard of that specific instrument, but I am familiar with 2 or 3 others and which are maybe of the same construction.

Mr. FJARE. An electrostatic precipitator. Did you ever hear of that?

Mr. BURNETT. An electrostatic what?

Mr. FJARE. An electrostatic precipator. Did you ever hear of that?

Mr. BURNETT. Very definitely.

Mr. FJARE. But you never heard of a microdine?

Mr. BURNETT. Not specifically that I can recall.

Mr. FJARE. Have you any idea of what I am talking about?

Mr. BURNETT. Well, I suspect you are talking about a dust remover, or a dust controller.

Mr. FJARE. Do you have any idea how it works?

Mr. BURNETT. An instrument for testing dust?

Mr. FJARE. No, no; it's for removing dust?

Mr. BURNETT. The microdine?

Mr. FJARE. Yes.

Mr. BURNETT. Well, it's an electrostatic precipitator.

Mr. FJARE. Well, it's not. Here is the point, I am trying to find out if you know what is going on in the mining industry. [Laughter.]

Mr. BURNETT. You can get a lot of answers to that question.

Mr. FJARE. The reason I am asking you is because I am aware that such an instrument is being tested and to me it has been proven very dramatically that it is a tremendous operation or a tremendous machine to remove dust. It's going to be reasonably cheap and it's going to take very little space. I am wondering how free the flow of information travels through the mining industry of each or of these developments.

Now, let me point out why I query. If I should discover that the development of such an instrument that I have been recently exposed to and that I have been very impressed with. If I should discover that should be kept a secret among the mining industry people then I would be quite concerned and quite willing to see that some type of regulation or law is passed to see that the tremendous benefit to humanity in the mining industry as a whole was made available to every person involved in the industry.

Now, I am not saying that it is not being done, I am not saying that it will not be done, but I certainly hope that it will be done on a free basis. That's why I asked you if you knew what this instrument did. Maybe its only been in existence for only such a short time that you had no opportunity to see it.

Mr. BURNETT. Is it installed at the Kelley shaft?

Mr. FJARE. Yes; that's the one I am talking about.

Mr. BURNETT. On my last visit through the Kelley when I went through it and it was explained to me quite thoroughly. That was, I think, about 18 months ago.

Mr. FJARE. You know what I am talking about then.

Mr. BURNETT. I am quite familiar with that. It was most interesting to us, most interesting, but there was no application in our immediate operation that we could see.

Mr. FJARE. But you know what I am talking about?

Mr. BURNETT. Oh, yes.

Mr. METCALF. Will the gentleman yield to the gentleman from Alabama?

Mr. FJARE. Oh, yes.

Mr. ELLIOTT. Let me ask you, Mr. Burnett, this question. Now this microdine, if I understand it or understood it, took dustladen air and absolutely removed the dust as it came through it.

Mr. BURNETT. Yes, that's correct.

Mr. ELLIOTT. The dust was completely filtered out or removed.

Mr. BURNETT. That's right.

Mr. ELLIOTT. Now, I am wondering—the air come out good and clean.

Mr. BURNETT. Yes.

Mr. ELLIOTT. Now, I am wondering whether or not it might for the future become imperative that that type of machine be placed in every mine where dust——

Mr. FJARE. Or flour mill.

Mr. ELLIOTT. Well, yes, in every mine or as Mr. Fjare suggested, flour mill or other place where dust might be a natural compositive of the industrial process?

Mr. BURNETT. Yes. In the operation of that electrodine the contaminated air is taken into the machine, purified, recirculated in the workings. Now, our operation we take the contaminated air and pass it out of the workings so that in effect you might say that we have an electrodine right now working for us, Mother Nature. That is why it is not applicable to our operations and may not be applied in many others, but if that contaminated air must be recirculated because of reasons of great depth, yes, I agree that they would be a great benefit.

Mr. ELLIOTT. I am sure you understand the purpose of my questioning. I just wanted to know that if the dissemination of information amongst the mining people is as free as we would like to see it. In other words, if you should in your operation—though it may be small—its completely feasible and possible that you would hit on some dynamic new means of solving the safety problem.

Now, if that should happen I am sure you would be more than willing, in fact not only be willing but you would make a concerted effort to see that every other miner in the United States would have the opportunity to enjoy the privileges of living under more safe conditions in a mine because of your discovery.

Mr. BURNETT. We are like everyone else, yes, we love to boast also. If we get something to boast about we like to tell the others.

Mr. ELLIOTT. Yes.

Mr. BURNETT. I can best answer that by—this has nothing to do with ventilation—but we have a small machine that we have been experimenting with in conjunction with the Bureau of Mines in our properties to try and eliminate and improve mining conditions, and there will be a paper given in Los Angeles within a month on that which would apply to some seven or eight thousand delegates who I hope will all come to hear it.

Mr. ELLIOTT. I can understand and appreciate why you would be jealous of an economic advantage you might have over some other miners, but I cannot conceive of any miner or mine operator denying his fellowman the privileges or the benefits that he may have discovered in trying——

Mr. BURNETT. I have never known of a case of a mine operator withholding information on equipment techniques that would be of a benefit to the industry.

Now, my association with mines and the mining industry may not be as long as some but it covers a span of some 20 or 25 years now. They are eager to pass it on because everyone benefits.

Mr. ELLIOTT. You would then agree that if you became aware of the condition where one part of the industry was holding out or denying the other parties of the industry the benefits of safety that they may have developed then you would see the practicability of legislation to see that that information was freely dispensed.

Mr. BURNETT. I correct the word "legislation." The question of safety again gets down to the local conditions, the conditions at that heading at that mine, and there is the big difficulty. Mining techniques, mining machinery, yes, that is widely used; but your safety practices in that heading are such that they are unique to that one operation. One thing further, a recent development has been in rock roof bolting which was discussed and mentioned yesterday. That has been discussed widely in the industry in the last 3 or 4 years and innumerable papers have been written about roof bolting, a very recent development, so in my opinion the moment that anything comes up like that it is widely disseminated.

Mr. ELLIOTT. Could I interrupt you right there. Are you aware if the fact, Mr. Burnett, that roof bolting was developed in Walker County, Ala., in the coal mines of the Albama Power Co.?

Mr. BURNETT. I was aware that it was developed in the coal mines; yes, and I think it had been used in the coal mines for many years before it was adapted to metal mines. I wasn't aware there was any specific mine.

Mr. ELLIOTT. And so far as I know the authoritative statement on roof bolts is a paper by a man named Dr. Milton H. Fies who is in charge of mining operation for the Alabama Power Co. This paper has been widely distributed. I am proud of the fact that the system originated in the 7th Congressional District of Alabama.

Mr. BURNETT. I think it was a great advance to the art of holding ground in place. Some places it cannot be used, but it has a wide reputation and, in fact, we are on the threshold of discovering how wide these applications are. We regret that our own operations are very narrow workings and do not allow us to use it. We are still using timber, we are behind the times. We have looked into it 2 or 3 times and our ground is such that so far we haven't tried it.

Mr. FJARE. Now, perhaps a safety engineer will have to answer this question if you can't. Now let's assume that you have reached perfection. That's impossible we know, but perfection in safety in a mine—we still are going to have people hurt aren't we, and that's human nature.

Mr. BURNETT. I am afraid that's right.

Mr. FJARE. Could someone tell me the percentages normally or averages or an allover picture in the mining industry what percentage of injuries are normally charged up to carelessness of the individual, what percentage is charged up to management not providing adequate safety precaution and conditions. Does anyone have those figures?

Mr. BURNETT. Not to my knowledge.

Mr. FJARE. I think it would be an interesting thing to know. Perhaps we don't.

Mr. BURNETT. In general I believe that the safety people proceed on the assumption that all accidents are preventable.

Mr. FJARE. That's a good practice.

Mr. BURNETT. I think that's the basic premise that we start from. Now, the pinning of the responsibility or the causes of those accidents I am not aware of any work that has been done on that line except in a local level again. We are very interested in things like that, and as a matter of fact, in our local safety meetings we discuss the previous accidents quite frankly. If we think the conditions were at

fault, the union members are quite frank to tell us. If perhaps a person is a little careless, the union people and ourselves also recommend that. We don't publish it. We might call that man aside and say you committed an unsafe act.

Mr. FJARE. Do you have a safety engineer in pretty near all of the mines in your association?

Mr. BURNETT. I couldn't answer that directly, but I would say if they have not got a full-time man, they have a man who is widely concerned with safety. You must realize our association is made up of many small operators who have from 10 to 15 men, and in those instances the shift boss is his own safety engineer.

Mr. FJARE. What latitude of freedom is granted to a safety engineer? He appears to me to be a slightly lonesome man. He comes to management on his ideas on safety and the management can say, well, we can pay for it or we can't, and he gets in trouble perhaps; and can go to the union, and they can say he is getting in their way.

Mr. BURNETT. The safety engineer is part of management.

Mr. FJARE. Well, I am saying part of management.

Mr. BURNETT. He is part of management. He is just as much part of management as the production men are.

Mr. FJARE. He is just as much part of union as he is management.

Mr. BURNETT. He works with the unions very closely. He works perhaps with the men very closely, because he calls on them. They sit down at the working place and discuss safety. At least our man does.

Mr. METCALF. Mr. Fjare, just a minute. Mr. Bley, do you want to come forward? If you will come forward so that the reporter can get your testimony, and we will put it in.

STATEMENT OF JOHN BLEY, GENERAL MANAGER, AMERICAN CHROME CO., NYE, MONT., AND VICE PRESIDENT OF MONTANA MINING ASSOCIATION—Resumed

Mr. BLEY. We have a system of reporting accidents where the employee fills out the accident report form and gives the reason for the accident, and why the accident happened and puts down his opinion. Then the safety engineer there puts down his. Now we have four categories, and they are divided in (A), (B), (C), and (D).

Now, (A) is supervision; (B) is unsafe tools; (C) is unsafe conditions; and (D) is the fault of the employee.

Now under the employee (A) was 2 percent; (B) was 8 percent; (C) was 48 percent; and (D) was 42 percent.

Now the shifter had no percentage under (A); 2 percent under (B); 33 percent under (C); and 60 percent under (D). The safety engineer had no percentage under (A), supervision; 1 percent under (B); 8 percent under (C); and 91 percent under (D); and that's the year to date figures.

Mr. METCALF. Mr. Bley, you are reading from a table there, aren't you?

Mr. BLEY. That is correct.

Mr. METCALF. Would you provide that table to the committee for the record?

Mr. BLEY. Yes.

Mr. METCALF. Would you bring it up here?

Mr. BLEY. The black figures that you see on there are for the year 1955. The plain figures on there are the number of accidents.

Mr. FJARE. Will you tell me again what these A, B, C, and D mean here?

Mr. METCALF. (A) is supervision; is that correct?

Mr. BLEY. (A) is supervision.

Mr. METCALF. (B) is unsafe tools.

Mr. BLEY. Unsafe tools. (C) is unsafe conditions, and (D) is under the fault of the employee, unsafe practice. It is not clear there with the pencil.

Mr. METCALF. That answers my question.

Mr. FJARE. That answers my question.

Mr. METCALF. Mr. Bley is this available for the committee for the record?

Mr. BLEY. Yes; it is.

Mr. METCALF. Is it your only copy? Do you want it returned?

Mr. BLEY. No; we have several copies here.

Mr. METCALF. Without objection it will be incorporated in the record. At this point if you have any other explanation or statement that will help us in our evaluation of that material, do you want to make any further statement about it?

Mr. BLEY. I don't believe so.

Mr. METCALF. Thank you for volunteering the information about it.

Mr. BLEY. Is that all?

Mr. METCALF. That is all, Mr. Bley. Unless there is objection, this chart and the subsequent charts will be admitted at the points that you indicate.

(Chart or table containing figures of the safety engineer as to supervision, unsafe tools, unsafe conditions, and unsafe practice for the years 1955 and 1956, and is here admitted and inserted in this record according to the ruling of the chairman.)

(Information referred to follows:)

Safety engineer's accident report form

1st quarter	Employee				Shifter				Safety engineer			
	1955		1956		1955		1956		1955		1956	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
A	9	4	2	2	7	3			12	5		
B	21	9	7	8	13	7	2	2	9	4	1	1
C	89	39	41	48	80	36	29	33	42	16	7	8
D	108	48	36	42	118	54	56	65	196	75	82	91

Mr. FJARE. Are the employees in the phosphate association all organized?

Mr. BURNETT. What do you mean, the mining association?

Mr. FJARE. Mines under your jurisdiction as phosphate mines, are the miners all organized?

Mr. BURNETT. Not entirely. I would say the large majority are, but when you get into the smaller operations with 4 or 5 or half a dozen men often they are not.

Mr. FJARE. When you sit down—I am speaking as a general overall picture of the phosphate industry—Do they normally in their negotiations for a contract with the union specifically mention safety conditions and working conditions in the mine as a part of the contract?

Mr. BURNETT. Our contract specifically mentions the formation of a safety committee, two men union and two men from the supervisory ranks. During negotiations there are often discussions about working conditions, but the more general, generalities, not all. Sometimes there are specific things brough up that we settle in negotiations, that's true.

Mr. FJARE. But its not a specific part of the contract. Let's take an example. I am thinking of myself if I were to be a miner belonging to a union I would certainly demand that that mine in which I work be ventilated.

Mr. BURNETT. Yes that's correct.

Mr. FJARE. I don't care whether it has a dust hazard or not, I think its only just and proper that any mine should have adequate ventilation. Now I would think it would be a term of the contract and that if the management or the owner of the mine violated or did not ventilate that mine it would be a breach of the contract.

I believe that's the most fundamental thing about organized labor is its ability to negotiate with its employer, and I think there lies the strength of both labor and management is that responsibility to do so. If it is not done on that level then our only choice is to go to the Federal Government to see that its done and I don't think management wants that or labor wants it. That's why I ask.

Mr. BURNETT. We have an agreement procedure set up in which woring conditions can be brought to management as a grievance. They are processed through the normal grievance procedure with about three steps and end up in an arbitration board.

Mr. FJARE. But they can be approved or denied. They are not a specific part of the contract, is that right.

Mr. BURNETT. No; the contract specifies that arbitration board is binding on both parties.

Mr. FJARE. It is binding, binding as a contract?

Mr. BURNETT. It says we will be bound by the award.

Mr. FJARE. I am sure that most of us are aware that the United Mine Workers and the coal industry have for years demanded as a part of their contract corrections of working conditions and violations of those conditions, or violations of attempts to correct those conditions is a violation of the contract.

Mr. BURNETT. We very definitely discussed it.

Mr. FJARE. That's all.

Mr. METCALF. Mr. Burnett, I want to suggest that we have enjoyed your full, frank, and forthright statement and perhaps if other members of the phosphate industry had been as forthright to another committee of Congress as you have been this morning there would have been other phosphate legislation passed at the or during the 84th Congress. I think that my colleagues have pretty well covered the subject, and I want to thank you for your appearance and want to thank the entire mining association which you represent for coming before the committee and helping us with these specific and difficult problems of Montana mines.

Mr. BURNETT. If I can make one final statement just to emphasize that our thinking locally is that safety and that safety prevention is a local thing, and what I mean by "local" is right in the working place; and the second point that when you start comparing your mine operations to another mine operation saying you got a pretty safe operation, look out because you are in trouble. The moment you say that I have got a good safe mining operation, you are heading down the path for trouble because you can't compare your operation with the operation of any others; you compare your results with previous results and if they keep improving, improving, and improving you then ultimately will have a safe operation. When you say zero, zero, zero, your frequency—some of them have reached that happy stage. We have some operators that have reached the stage where they are in that very happy condition. They can say with hard work on the part of the union and the management they may be able to maintain the safe operation. That's our philosophy locally at least. Thank you, gentlemen.

Mr. METCALF. Thank you, Mr. Burnett.

The next witness is Mr. Roy. Is Mr. Roy present? Mr. Roy, we are glad to welcome you. I am especially glad to welcome my neighbor from East Helena here and I wish you would identify yourself for the record here.

STATEMENT OF J. T. ROY, GENERAL MANAGER, EAST HELENA PLANT, AMERICAN SMELTING & REFINING CO., AND CHAIRMAN, EXECUTIVE COMMITTEE, MONTANA MINING ASSOCIATION, EAST HELENA, MONT.

Mr. ROY. Mr. Chairman and members of the committee, my name is J. T. Roy. I am general manager of the East Helena plant of the American Smelting & Refining Co. located at East Helena, Mont.

Mr. METCALF. You are also chairman of the executive committee of the Montana Mining Association?

Mr. ROY. Yes; I am.

Mr. METCALF. Proceed, Mr. Roy.

Mr. ROY. The East Helena plant of the American Smelting & Refining Co. is a lead smelter located in Lewis and Clark County, 6 miles east of the capital city of Helena.

We have employed about 300 employees and the one particular point I want to emphasize today is the fact that our last injury, what we call a loss-time injury, occurred November 15, 1952. Since that time we have operated without injury.

We have received an award of the National Safety Council for over 2 million man-hours without suffering a disabling accident, which is their award of merit; it's the highest award given by the National Safety Council.

We in our company have an award granted each year to the plant who has the best accident record for the entire year as pertains to frequency and a plaque for severity. For the past 3 years we have won all 2 awards for 3 years. We are very proud of that record in Helena and I am very happy to say that the members of the Mine Mill Union, Local 72, and the officials of the Mine Mill Union are just as proud of that record as we are; and I think they well should be

because actually it's the work of the men there in the wonderful cooperation that we have from them that has made such a record possible.

I want to say that in our company the officials from the chairman of the board right down are very much not only in favor of safety but they are enthusiastic about it. They believe that accidents can be prevented and we are doing everything in our power to prevent them. Our record in a way at Helena shows that that can be done. It's a good record; if there are better records throughout the various industries it's one of the better records, too; but it's the case of the management and the men, although when I speak of management as a broad term—all the supervisors—working with the men and to prevent accidents, we have quite a program.

Now in our company we have set up a medical department. It's headed by Dr. Pento located in Denver, Colo., and we have such men as Dr. Philip Brinker, who is of Harvard University and who is a consultant. He is the inventor of the iron lung. We have a department in Salt Lake City which devotes full time to safety and safety inspections of all plants of the company; and working under Mr. Breitzer there we have several supervisors who go around and make it a full-time duty to inspect the plants of the American Smelting & Refinery Co., and they send out reports comparing each month the records of each plant and show how they compare.

If an accident occurs at one plant, every plant gets a full report of how that accident occurred, what steps that were taken to prevent recurrence at that particular plant, and what steps should be taken at all plants to prevent its occurrence at another plant. It's something that we see the graphic results in Helena, but other plants have had good records, too.

On the local level we have the committees by the union; we have the two men who are elected by the membership to work and meet monthly with the members of the staff, and they present their suggestions for improvement of health and conditions, health and welfare, health and hygiene; and we also have meetings with the men and the various departments elect a member and they are sent down to meet with the assistant superintendent of the plant and safety department. We have two full-time members of the safety department who devote their full time to safety—conditions of safety, health, and hygiene. That's their job to see that we improve in every way we can. We have a vast array of fans around the plant and throughout the plant which pull dust and laden gases from various places and filter them through bags or in some cases an electrostatic precipitator and make the working places free of dust and obnoxious gases. Something that can't be done, we realize, is a problem of engineering, but there is a logical approach to it and the scientific approach to making these conditions healthful and making the air fit to breathe so that it will not harm anyone's health.

I, in all my time at the smelter, and I have been employed by that company for 27 years, I have never heard of a case of silicosis in the East Helena plant. I would say that I could count on the fingers of one hand all the cases of lead poisoning that occurred in the past 20 years.

We do have problems, and I won't say that we don't, but we realize them and we feel that we can work out and put our house in order, and I think our record shows that to quite a degree. It is possible to do it by working intelligently and with the cooperation certainly of the laboring men. They are very enthusiastic about it.

We have a drawing each month of safety shoes. We give 5 pairs of safety shoes each month to every month that we don't have a disabling injury, and all the names of everybody on the payroll are put in a hat and then we pull out 5 names and each of these men gets a free pair of safety shoes. That's to provide a little incentive for safety.

In the last 2 years we have put on a safety picnic because we won the pennant. We have the men and their families and our pensioners and their families gather at a picnic together, and I think in that way we work together and we solve these problems; and I do not believe that Federal legislation is necessary to do something that we can do without.

I believe, gentlemen, that about completes the thing.

Mr. METCALF. Thank you. Thank you very much, Mr. Roy. The gentleman from Alabama?

Mr. ELLIOTT. I have no questions.

Mr. METCALF. My colleague?

Mr. FJARE. One brief one. You mention the National Safety Council and the awards you have received from them. All I know about the National Safety Council is that they predict how many people are going to die on Labor Day. How much service does the National Safety Council render you? Does it have a servicing department?

Mr. ROY. Well, they put out a magazine and they provide information that way.

Mr. FJARE. Have you had any contact with them?

Mr. ROY. Yes.

Mr. FJARE. Safety problems can be taken up with them in consultation?

Mr. ROY. Surely, and through the magazines you could get information available.

Mr. FJARE. Would you say it was rather an effective service?

Mr. ROY. Yes.

Mr. FJARE. That is all, thank you.

Mr. METCALF. Thank you, Mr. Roy, for coming here and telling us about how you and your particular smelter have met your particular problem, and I know that these incidents and typical cases will be helpful to the committee in their consideration in the overall problem.

Mr. ROY. I think the comparisons were made with the coal mines recently. I think in the metal mines where we don't have these calamities occurring in the metal mines as we have in the coal mines I don't think that might be a point that there is hardly any comparison in the industry as the coal mines and metal mines.

Mr. METCALF. That is the point that has been brought out several times although a man—one man killed in a mine accident is just as important to him and his family as if he was killed as part of a disaster where 30 or 40 men were killed. Unless you have something to add we are very grateful for your appearance here.

The next witness we have here is W. G. Maloney, who is secretary-manager of the Mining Association of Montana.

I particularly welcome Mr. Maloney before this committee. He has been before other committees of Congress and I am glad to have you here.

Mr. Maloney, you may identify yourself and proceed.

STATEMENT OF W. G. MALONEY, SECRETARY-MANAGER, MINING ASSOCIATION OF MONTANA

Mr. MALONEY. My name is W. G. Maloney, and I am secretary-manager of the Mining Association of Montana. I do not intend—that's why I have not seated myself—to make any statement or comments except to extend to the committee our thanks for being asked to appear here and for the very courteous way we have been treated, and also for the fair and impartial manner in which the committee has handled this hearing.

I think the hearing has been very instructive, and with that I will close.

I know its noon hour, and I don't intend to say anything further because it has been ably presented by the officials of the association and the main operators in the association.

Association membership is limited to 500 employees, so they are the main operators, and with a couple of more operations we had the conditions as they expressed them; and we thought on account of the time involved, etc., we would cut it down to have just a few testify in order to help along in the case and if there is anything further called for we could submit it at a later date.

Mr. ELLIOTT. Mr. Maloney, do you represent most of the mines that have 500 or fewer employees in this State of Montana?

Mr. MALONEY. Yes, I would say we had the majority of those less than 500. As to the majority of what we would refer to as the prospectors there is a lot of them operating that I haven't any contact with and haven't had any contact with, and as to how many of them I couldn't tell you.

Mr. ELLIOTT. Could you tell us how many members your association has or had last year or had at any convenient period of time?

Mr. MALONEY. Members?

Mr. ELLIOTT. Yes.

Mr. MALONEY. The members I would have to give you both those who are small miners and maybe only individual miners, and the corporation mines. When I say 1 that 1 would include each 1, say 3.

Mr. ELLIOTT. Yes, sir.

Mr. MALONEY. That would be a total of 3 men or 2 men as they testified this morning.

Mr. ELLIOTT. Yes, sir.

Mr. MALONEY. Counting that way there is approximately 200 belonging to the association.

Mr. ELLIOTT. Two hundred members making up the Montana Mining Association?

Mr. MALONEY. Yes. Now, for several months there there was nobody in charge of the association as the secretary manager. The officials handled matters themselves after the death of the late Carl Trauerman so the association naturally would go down some in membership. I think the membership of the association will vary as a

general run from 250 to 400 members when you get down counting your 2 and 3, 1 and 2 man outfits that come in and the most of them will come back in.

Mr. ELLIOTT. I have been impressed that it now has a very efficient manager and I would not be at all surprised if the membership didn't go up considerably.

Mr. MALONEY. That is my hope.

Mr. METCALF. Just a moment. I want to assure you that the members of this committee our gratitude in your appearance. We have enjoyed the appearance of the members of the Mining Association. I believe it has been very helpful and very informative and we thank you for arranging their appearance.

Mr. MALONEY. Thank you.

Mr. METCALF. I propose to call two more witnesses before we recess for the noon recess. Is the representative of the International Electrical Workers here. Will you come forward here.

You are here representing the Local 65, International Brotherhood of Electrical Workers. You may proceed, Mr. Williams.

STATEMENT OF RUSSELL WILLIAMS, WIRE WORKER, ANACONDA CO., AND ASSISTANT BUSINESS AGENT, LOCAL 65, INTERNATIONAL ELECTRICAL WORKERS, BUTTE, MONT.

Mr. WILLIAMS. My name is Russell Williams, 57 West LaPlatte Street, Butte, Mont., assistant business agent of local 65. I work as a wirer for the Anaconda Co. I just have a few on a list here given to me to report over here. It's some of the stuff in which we thought would be interesting here.

The following listed items are from the members of the Local 65, International Brotherhood of Electrical Workers concerning the nonsafety being practiced in the Anaconda Co.

No. 1. Any time a man is working on an electric switch, the motor should be stopped until the job is completed and not at intervals. That is referring to the Kelley.

No. 2. Having one man going up in the slushers alone.

That's going into the stopes and if he goes up alone he is loaded down like a Missouri pack mule. He has to carry tools high up. It's very hazardous.

No. 3. At open pit——

Mr. ELLIOTT. That second one again. Did you say going up into the stopes should be limited to one man at one time. Is that what you meant?

Mr. WILLIAMS. No, we would like two men to go up there. What it is now is one man going up. They are sending 1 man out on the job and we want 2 men.

Mr. ELLIOTT. Thank you, I just misunderstood you.

Mr. WILLIAMS. No. 3. Open pit the primaries are at an unsafe distance from the ground. That's down at the Berkeley. The primaries have caused high tension. It's an unsafe proposition. If children could even reach it why anybody could reach it with their bare hand. We think they should have sticks up in the air further on it so it would be out of reach.

No. 4. We would like to have inspection held by someone, an unbiased inspection held by someone would show numerous safety hazards on the electrical end.

No. 5. On the main line at the Kelley mine the motors are not stopped when men are working on the line.

I guess you fellows have been down there and it is a pretty tough proposition. It's pretty rough trying to work there, and we had 1 man killed there about 3 years ago, an electrician. He had stopped, and they say that if he didn't run he wouldn't have been killed. Well, the fellow that was with him said that it was up to him that if he stopped there he was going to get killed anyway, so I guess he took a chance.

No. 6. Men are told to buy safety equipment but the company will not buy necessary safety apparel for the men.

We have to buy our own equipment, our tools, and which most of the miners don't have to buy. We have to buy our handtools and safety hats and shoes you know, and when you get a rap on the head or on the hat it would break the hat and you got to go and buy a new hat which will cost about $4 or $5, and that comes out of the pocket. We figure that as long as the company wants to have safety they should at least go 50–50 on the material they want us to wear.

No. 7 is that trouble men are sent in on electrical blasting by themselves.

That is something that come up here yesterday on blasting and it is a hazard going in there with one man on this equipment. He has got to go in quite a ways and they should have two men there to make a test. In the wet drifts if the miners round don't go off and maybe there is an opening in the wire going in there and they might call an electrician to find the opening and sometimes the miners find it, but we figure there should be two men going on in this electric blasting. Any time you are in there and that round goes off why you are not coming out.

No. 8 is on the troubleshooter. That's on the 11 o'clock shift. He works alone and the only one that has any contact with him is the operator down here. He calls in to her—they have a trouble call and she gets a hold of the troubleman. He might talk to the foreman of the mine, the night foreman, and when he gets there he goes down all alone; and the only one that would know where he was at is the operator and she don't even know what mine it is—she would only know what mine he is in.

We think when the troubleshooter goes out after the shift comes off that there should be somebody with him going in these places. In going in these places all alone when you go in there you don't know whether you are coming out or not, you really don't know where you are going. There is a lot of distance in these mines to be traveled by 1 man and we think that there should be 2 men going down there after the shift goes off.

That's about all I have, and we are in with the miners on this silicosis. About two-thirds of our membership goes down the mine we are really in on silicosis. We have had a few members that had silicosis that are off on pension now. We go down the mine I would say more than any other craft on the hill. That's about all.

Mr. FJARE. Have you on your union, do you have a grievance committee?

Mr. WILLIAMS. We do.

Mr. FJARE. Have you taken these particular recommendations that you have to the grievance committee or to the company?

Mr WILLIAMS. We tried to take them down there. Our grievance committee is not as active as the miners committee. The only way we can get this done is make a grievance and when we get to a grievance its more like a football game to get there. First we take it to the foreman and then we take it to our electrical superintendent and then we go from there down to labor management, Mr. Hogan, and where I would say he is about like the men, and if we can get by him we can get up a little bit to the secondary about these complaints, and so that's about the way we take up our safety program and we have to make kind of a grievance out of it. We have no safety program like the miners have.

Mr. METCALF. Well, I assure you that you got to headquarters this morning.

Mr. FJARE. In other words, you are telling the committee that your grievance committee is not performing or functioning as well as you would like to see it perform; is that right?

Mr. WILLIAMS. Well, it's functioning but we have quite a time getting right up to the point. We have to go to too many.

Mr. FJARE. Did you ever go to see the safety engineer?

Mr. WILLIAMS. In the mines?

Mr. FJARE. Well, wherever he is.

Mr. WILLIAMS. Yes, we see him; but he is like ourselves, he is working. He is taking orders.

Mr. FJARE. You mean nobody listens to him?

Mr. ELLIOTT. You mean that the safety engineer has his problems, too?

Mr. WILLIAMS. The same as we have.

Mr. FJARE. What's your recommendation to solve your problem?

Mr. WILLIAMS. Well, I think the Government should come in and we should have somebody behind us from the Government. I would say they would have a little bit more push than we would from the State.

Mr. FJARE. In other words, you would recommend Government compulsion on a company to enforce safety regulations; is that correct?

Mr. WILLIAMS. Yes, sir.

Mr. FJARE. Do you realize and do you recognize what that is going to mean?

Mr. WILLIAMS. Well, I don't know what way you are talking, are you talking finance?

Mr. FJARE. No, you are going to negotiate with a Federal Government or a Bureau of the Federal Government rather than your employer, you prefer that?

Mr. WILLIAMS. Well, I think you could sit in at the negotiations. The Federal Government man could sit in with us at negotiations to see what is talked about and to see that it would be lived up to.

Mr. FJARE. That's all.

Mr. ELLIOTT. Let me ask one additional question here, maybe it will be irrelevant; but did I understand you to say the mining companies do not furnish safety belts and hats and shoes and safety equipment?

Mr. WILLIAMS. They sell them. We buy them off of the company, not the shoes, but you buy the belt and the hat.

Mr. ELLIOTT. Does the miner who goes into the phosphate mine or the copper mine or whatever it might be, does he buy his safety hat and shoes and safety belt and lamp and all of that?

Mr. WILLIAMS. You said phosphate mines and I haven't worked around them, but in the copper mines in Butte—I am local—and I would say in Butte in the copper mines the miners buy their own hats, safety belt, and shoes, and the electricians do the same; they are compelled to buy them.

Mr. ELLIOTT. That is the custom in the industry?

Mr. WILLIAMS. Yes.

Mr. METCALF. Thank you, Mr. Williams, for your addition. As I understand it, the electrical workers are in accord with the testimony that's been given here by members of the miners' union, et cetera, and you have added two specific recommendations because of your specialized duties and tasks in the mines.

Mr. WILLIAMS. Yes, sir.

Mr. METCALF. Thank you, Mr. Williams.

The next witness will be Jim Umber, president of the Montana State AFL–CIO, and Mr. Umber, in addition to the official welcome to the committee, I want to add my personal gratification that you are here to testify. Mr. Uumber has a prepared statement, and if you will identify it and read it or proceed in any way you see fit.

STATEMENT OF JAMES S. UMBER, PRESIDENT, MONTANA STATE AFL–CIO

Mr. UMBER. My name is James S. Umber. I am president of the Montana State AFL–CIO.

I appear before this Subcommittee on Mine Safety of the House Committee on Education and Labor to wholeheartedly endorse the provisions of the House bill as introduced by Congressman Lee Metcalf.

I have read the bill and I am familiar with the provisions and as to what this bill attempts to accomplish.

As far as I personally am concerned, I feel that our miners have waited too long for the legislation that your subcommittee now has under consideration, but it is never too late to correct a bad situation. Your subcommittee is to be congratulated for attempting to correct the deplorable conditions under which our miners have had to work.

I am not a miner, I am a carpenter, but I would have to be totally remiss in my duties as president of the Montana State AFL–CIO, and as a citizen of our good State, to be blind to the conditions under which our miners labor in Montana.

It is a fact that our State and other States have failed to enact adequate safety codes to protect the miners who work in the metallic and nonmetallic mines. What laws or codes that are on the statute books are obsolete and have not been revised in keeping with the times. These State codes also suffer from a lack of adequate appropriations, lack of trained men with civil-service status, and the inevitable State politics.

The passage of this bill will be an initial step toward the enactment of much-needed legislation on a nationwide basis.

The Bureau of Mines has established a brilliant record as far as the curtailment of accidents and fatalities in the coal mines are concerned. While this bill does not give the Bureau of Mines the power

to shut down a mine that the Bureau believes to be in violation of the Federal Mine Safety Code, yet it does give the Bureau of Mines the power to make an inspection as to unsafe conditions, and to report these conditions relating to health and safety to Congress.

The Montana State AFL–CIO supports this bill. I wish to commend the United Steelworkers of America for their having sponsored this bill and for their work in having this subcommittee set up by the chairman of the House Committee on Education and Labor.

I thank the subcommittee for allowing me to put my views on this important bill.

Mr. ELLIOTT. Do you know, Mr. Umber, does this State have a State mining department or a State safety department or a State mining inspector?

Mr. UMBER. It has mining codes for the coal-mining industry but I don't know and am not familiar with the codes.

Mr. ELLIOTT. But no mining codes for the metal mines?

Mr. UMBER. I am not familiar with that.

Mr. ELLIOTT. Do you know whether or not the State makes regular inspections of the coal mines and of the metallic mines of the State here?

Mr. UMBER. I believe they do.

Mr. ELLIOTT. That's all, Mr. Umber.

Mr. METCALF. I am very grateful that you came before the committee and am pleased that you suggested that I had introduced the bill. I am a cosponsor of the legislation. I call your attention to the fact that under the rules of the House only one Congressman may sponsor a bill, so the primary legislation here was introduced by the ranking member of the Committee on Education and Labor and that's to the chairman, Mr. Kelley of Pennsylvania, and the rest of us have added our names to the bill as cosponsors. Mr. Kelley is the primary sponsor of this legislation and the rest of us are going along with him.

Thank you very much, Mr. Umber.

The committee will be in recess until 1:30 and at 1:30 the first witness will be Mr. Jim Hartsell to be followed by the rest of the witnesses representing local No. 6001 of the United Steel Workers. The committee will be in recess.

(Recess from 12:15 to 1:30 p. m.)

Mr. METCALF. The committee will be in order. Our next witness will be Mr. Jim Hartsell who is appearing on behalf of the United Steel Workers of America, Local No. 6001, Butte, Mont.

Now, Mr. Hartsell, do you have a prepared statement with you?

Mr. HARTSELL. No, my statement is informal but I have made some notes to kind of guide in making my statement.

STATEMENT OF JIM HARTSELL, MINER, AND MEMBER, LOCAL 6001, UNITED STEEL WORKERS OF AMERICA, AFL–CIO, BUTTE, MONT.

Mr. METCALF. Now, will you identify yourself for the committee and tell them what your official position is, and you may proceed as you see fit.

Mr. HARTSELL. My name is Jim Hartsell. I am a resident of Butte and also a Butte miner. I belong to local No. 6001, United Steel Workers of America, AFL–CIO.

Mr. Chairman, and members of the committee, I am fully conversant with the provisions in this bill the subcommittee now has under consideration. I personally believe and think that this is a good bill and a step in the right direction to help and give support and relief to the miners and people that I represent.

I personally think the bill could go a lot further than it does, but I realize that a step has to start some place and I think this is it. I hope will all the sincerity that the 85th Congress will enact this bill into legislation, and I would like to point out to the committee sections A, B, C, D, and E, of this bill are very important sections connected with labor and labor problems where safety is concerned. I would like to recommend to the committee to give their full consideration to these sections so that these sections might be enacted in any legislation that might come forth in these hearings.

I feel that the most supreme and severe penalty that one has to pay for inadequate safety measures are negligence on safety that isn't enforced is his life.

I made a study of some of the fatalities that occurred in the Butte mines over a number of years, fatalities that could have been prevented had a direct degree of safety been measured properly, and with the permission of the committee I would like to go into these fatalities and read them as I have recorded them here.

Mr. METCALF. You may continue.

Mr. HARTSELL. This is a quote from a coroner's full report:

To: William Trevena, Montana State mining inspector, the Butte Miners' Union No. 1, Anaconda Co.

Subject: Coroner's report on fatality occurring at the Lexington mine, May 17, 1956.

Deceased: Marvin H. Johnson. Occupation: Drift miner. Age: 33. Experience: Approximately 6 years. Place: B–1243 E. Drift. Time: Approximately 10 p. m. Cause of fatality: Fall of ground. Card No. 106253.

An investigation of the accident detailed above was made. The findings of this investigation are related herein for the purpose of informing all concerned of circumstances surrounding the accident. A six-man investigating party consisting of Barney Rask, recording secretary of Butte Miners Union No. 1; Dick O'Leary, assistant general superintendent; Dan Griffin, mine superintendent; Clarence Crow, shift boss; Walter Kneebone, mine safety engineer; Joe Harkins, chief safety engineer; and Mr. Paulson made a down-in-the-mine investigation of this case.

I was informed at the mine—speaking of Mr. Paulson was informed at the mine—that the following-named men assisted in bringing the body to surface: Clarence Crowe, Jerry Keller, Herman Johnson, Jack Timmons, John Walker, Harold Bodenbager, and Russell Johnson. Russell Johnson and Harold Bodenbager were partners of the deceased. The underground investigation of this case was hindered somewhat by the absence of the only witness to the accident. I was told that——

Mr. METCALF. You are speaking of yourself—were told?

Mr. HARTSELL. Speaking of Dr. Paulson, the coroner.

Dr. Paulson was told that the men who were working partners with the deceased and the motorman serving this drift had gone on top after the accident had—after the accident and had left the mine before his arrival. [Reading:]

The partners named are Harold Bodenbager and Russell Johnson. Russell Johnson is a brother of the deceased. The motormen's names are Jack Timmons and John Walker.

Describing this working place I have been informed that this drift has not been working for about 2 months and that it was opened up again the first

part of the week. The regular drift round in the breast of this drift was blasted on Tuesday night and on Wednesday night plugs in the football were blasted to enlarge the drift. It is my understanding that Mr. Johnson was mucking out to make room for a set of timber when the accident happened. This drift is approximately 11 feet high, 14 feet wide, and it is 12 feet 7 inches from the breast—from the last set of timber to the breast of the drift.

There are no safety stringers out overhead and it is doubtful that if stringers had been in place if they could have prevented this accident.

The slab come off the footwall. The last set of timber had a doubling cap on top of the regular set of timber and I understand this is the reason no safety stringers were put in. The last set of timber in this drift partially blocked the slab when it fell. It is not even 4 feet from the last set of timber to the site of the accident.

The size of this slab was approximately 6 feet long, 7 feet wide, and 2 feet thick. I was told that Mr. Johnson was completely buried up to his waist by the rock that fell. The slab pushed Mr. Johnson on to the arms of the mucking machine, crushing him to death. Mr. Herman Johnson, shift boss and a cousin of the deceased, told Dr. Paulson that he was in this working place twice before dinner the first time at approximately 8:15 p. m. and the second time at about 9:20 p. m. He also told me that he and Marvin Johnson had spent some time trying to bar this slab off the footwall but could not do so.

It was also mentioned during the conversation that the deceased had made the statement that he didn't like the looks of this slab and when he couldn't bar it down he kept on working.

Mr. Jack Timmons and Mr. John Walker, the motormen servicing this drift come to my office—Mr. Paulson's office—the morning following the acident and told their version of the accident to my assistant. Mr. Walker, being on the motor, did not see the accident happen. Mr. Timmons saw the slab fall on Mr. Johnson and Mr. Timmons immediately went to the aid of Mr. Johnson, and realizing the fact that more help and assistance were needed he went after the partners of the deceased. Meanwhile, Mr. Walker had to set the brakes on the motor as the mucking machine was still in gear and was pushing against the motor. Mr. Walker shut off the air from the mucking machine and when Mr. Timmons come back with Mr. Bodenbager and Mr. Russell Johnson he went after more help and called surface for the first-aid equipment.

There is no doubt that this accident could have been avoided if the proper safety precautions had been taken.

No. 1: No safety stringers in place.

No. 2: Working under a slab that was known to be loose and dangerous. Unsafe working conditions such as this should not be tolerated by the men or by the shift boss, and in large print, "This slab should have been and could have been blasted out."

Submitted by Dr. EMMETT J. PAULSON, *Coroner.*

That is one of the many things that this bill, in my opinion, is going to enforce and help to bring about.

Mr. METCALF. Would you mind this interruption.

Mr. HARTSELL. Go right ahead.

Mr. METCALF. Mr. Hartsell, do you think that an annual mine inspection would have caught such a condition as you are describing right now?

Mr. HARTSELL. No, Mr. Chairman; it could have and could not have caught this particular fatality, but if this bill that is now under the subcommittee's consideration is passed I understand the safety measures in this bill will have to be enforced.

The point that I was going to bring up just a moment ago is, a shift boss does definitely know or is supposed to know the dangers and hazards of a slab that he worked on himself to try to bar out.

He should have instructed, in my opinion, this miner to blast it out. The coroner's report isn't the only report on it. I also talked to the chief mine inspector for the Butte mines and I asked him his opinion of this particular fatality.

No. 1: He said take it down; bar it down or blast it down.

Now, he was on his under the ground inspection.

No. 2: It was to catch it up, stall it, rock bolt it, stringer it, back ride it, gob lag it or crib it.

No. 3: Its too late to mention No. 3 as actually the fatality has happened. Stay out from under.

So had I—or in my opinion think that a direct degree—or that if a direct degree of measure been in force there and instructed there the late Mr. Marvin Johnson might be alive today.

No. 2: That I have made an investigation on and have done a little research on was William Beatty. This was submitted by the chairman of the grievance committee at the Mountain Con mine. May I?

Mr. METCALF. Proceed.

Mr. HARTSELL. At about 1:50 p. m. on Tuesday afternoon, March 13, 1956, William Beatty who was working on a motor as a swamper was killed on the 4,400 level of the Mountain Con mine. He was servicing 4,407 raise where there was about 4 cars of rock on a sill that was to be removed with the mucking machine. They had one loaded car on the end of the train and had pushed it back to the rail track as far as it would go and was in the act of uncoupling it from the rest of the train. When the accident happened his partner had told me that he had difficulty in raising the coupling pin and crossed over to the other side of the car where the drift was very narrow. In fact, in this particular place the clearance between the car and the wall was only 18 inches; also at this point there was a headboard on either side of him that had been rock bolted to the wall about 4 feet from the bottom of the drift. The rock bolts extended through the headboards to about 4 inches from the inside of the car and when his partner moved the train ahead he was caught on 1 side of these rock bolts and was rolled by the loaded car that failed to uncouple for about a distance of 2 or 3 feet. According to his partner this man then fell to the ground, crawled from between the cars for about 12 feet and then collapsed. I also observed that on the side of the drift where the cars should have been uncoupled that the most narrow place is about 3 feet, also that while working with a train of 4 cars it would be difficult for the motorman to see his partner on the narrow side of the drift. Both men had experience on motors and both were equipped with whistles.

The motor was in good condition, as the machinist worked on the brakes and compressor unit during the morning. I quote from the chairman of the grievance committee from the Mountain Consolidated mine:

> This accident might have been prevented if the couplings had been in perfect working order or if the man had spotted his load at the beginning of the tall track instead of working from the breast out.

Any questions before I go on?

Mr. METCALF. Go ahead.

Mr. HARTSELL. How will we ever expect to gain safety measures, or have a decent bill enacted by our Congress that might be the prevention of life, if the safety measures aren't acted on the equipment first.

Equipment has to work in perfect order before you can even talk about safety measures. That is why this bill is important.

Mr. FJARE. Do you feel this accident, to which you are referring to at the moment, could have been—or would it have been prevented under the terms of this legislation to which you make reference?

Mr. HARTSELL. Yes, sir; I do. According to the man who made the survey on it and who submitted this article, and he was a grievance man, if the coupling had been in perfect order he would have been able to stick his finger in it, if it's that type of coupling, and lift it with no strain.

Mr. FJARE. I am not an expert on this particular bill. I haven't read it many times, nor do I know all the contents, but will you point out for me and the committee that particular portion of the bill, as now before you and before us, which, in your opinion, would correct the situation to which you are referring here in your report?

Mr. HARTSELL. Well, the bill in full, I think I will have to read the whole bill—if it's permissible with the committee, I would be glad to—but the bill in full actually means that safety measures would have to be enforced.

Mr. FJARE. Now, let's assume that that's in the bill. The bill in it would insist. Now, I haven't been convinced of that, but I am assuming that that's the condition.

Mr. METCALF. Excuse me. I can say—or let's assume that is the situation, although that isn't the situation in this legislation.

Mr. FJARE. I don't think it is.

Mr. METCALF. But there may be legislation introduced that would have compulsion of that sort, and we would like to have your comment.

Mr. FJARE. I don't see compulsion in this bill. Now, I am assuming it's your purpose in reading this report—which is of tremendous value to me, and, I am sure, to the rest of the committee. I want to have it clearly understood, at least for my own sake, that if this bill which you are hoping will be passed, whether it's this one or one like it, or at least one that you have said, I think, in many ways would make it compulsory that coupling on that motor or on that train would be in perfect working order; or therefore it would have been unnecessary, I assume, for the other man to go on the other side of the train and endanger his life; is that correct?

Mr. HARTSELL. That is correct.

Mr. FJARE. Well, I don't see that in this bill.

Mr. HARTSELL. I think I first stated, Mr. Congressman——

Mr. FJARE. I know you did, but I wish you would go further.

Mr. HARTSELL. Mr. Congressman, I felt personally that this bill didn't go far enough.

Mr. FJARE. Now, let's say this: Even if we have a law that is absolutely—the terms of the law would indicate or state in fact that no train in any mine will ever move until every coupling is in working condition, perfect condition. That, in essence, is what you are going to have; is it not? If that train is going to move without a perfect working coupling, then we haven't solved the situation at all; have we?

Mr. HARTSELL. That is correct.

Mr. FJARE. Now, that can happen. We can enact that type of law, I think. Now, whether we want to or should is another matter; but where along that line are we going to get to the man himself, by law or by other means, because anything can happen in a few moments. Something can happen to that coupling in a few moments, or a rock can slide into it, or just the slightest thing I can assume, and jamb it

momentarily; and I can picture the man, I am like him myself, but if it doesn't work in this position I will move to a more advantageous position to get the job done.

Are we not only going to have to enforce the management to see that the coupling works, and also enforce it upon the miner himself that it is a violation of law to step across that train to step into an area where he would very likely be jeopardized; is that not correct?

Mr. HARTSELL. That is also correct.

Mr. FJARE. All right; I understand what you are talking about.

Mr. HARTSELL. May I interrupt for just a moment.

Mr. METCALF. You have the floor.

Mr. HARTSELL. In this particular case a fall of rock on the couplings or an act of God——

Mr. FJARE. But possible.

Mr. HARTSELL. But possible; didn't cause this particular fatality.

Mr. FJARE. No. I am not saying that that was the case. I just picked something out of the air as a possibility.

Legislation, of course, is not always the complete solution to a problem. It's a help lots of times and, of course, our job as a committee—particularly myself at the moment—is trying to search out the best methods to accomplishing an end—safety. And what I wanted, is to understand what you are saying completely, and that's why I asked you this question.

Go ahead, I think you cleared it up for me.

Mr. HARTSELL. No. 3. The late Mr. E. M. Ranch, of the Lexington mine, was killed July 20, 1954, when the ground gave way under his motor.

What I am contending, Mr. Chairman, is that a motor weighs several tons. When you talk about a sill giving away in a mine it must seem some sort of workings is going on under that sill or around that sill that the mine people will know about who run the mine—such as the foreman or mine inspector—would know that these workings was going on, and that they should foresee the danger that something weighing several tons like a motor would jeopardize a man's life. That's why they are in those positions; I imagine that's why they are selected for those particular positions. The result of this is the motor, sill, and all, caved in, and rock came down and the late Mr. E. M. Ranch isn't around any longer.

I think that there is another degree of safety measure there that could have prevented this fatality. It could have been caught up and stayed out of it until it was caught up and instructed by the people that the late Mr. E. M. Ranch worked for to stay out of there with something as heavy as a motor.

Mr. FJARE. Did I understand you to say that you had investigated this case?

Mr. HARTSELL. I didn't investigate this case. I made a study of the fatalities and the causes of these fatalities.

Mr. FJARE. Are you aware in your investigation or your study of it, did, anywhere along the lines of your study, did you become aware of the fact that this condition had been previously noted or recognized as a hazard, or was it a complete surprise to everyone?

Mr. HARTSELL. No, Congressman, I didn't; but having had experience in the mines of working underground I know that a sill doesn't become ready to collapse or fall away to another sill without

working conditions going on, and if working conditions were going on certainly the people who run the mine would know those working conditions were going on and that sill might be caving in if they were that close to it or whatever that incident might have been.

Mr. FJARE. Am I correct in assuming that men working in that area, miners, were capable of recognizing that a hazard existed there?

Mr. HARTSELL. Would the degree of recognizing be up to the miner or safety engineer or the foreman of the mine?

Mr. FJARE. I think it's up to someone. I think the miner that's involved if he realized it—now, you understand, I don't know a thing about what I am talking about when I am talking about mining because I don't know anything about it; but I am assuming from your statement and from your testimony that this sill—whatever that is, I don't even know what that is—but if this sill was unsafe wouldn't miners know it as well as management?

Mr. HARTSELL. The miners——

Mr. FJARE. Or inspectors or foremen or whoever we are speaking about. Wouldn't the miner himself who is working in the area be as conscious of that hazard existing as would anyone else?

Mr. HARTSELL. The miners who are working on that project I imagine would know it to a certain extent, but the fact remains a sill—let me explain what a sill is. That's where the track is, that's what the motor and cars are run on. There are many miners change mines from day to day in Butte. I think that everybody here will bear me out on that who is connected with the mines.

Mr. FJARE. You understand I am not trying to place any blame on the miners.

Mr. HARTSELL. I am sorry I never went into the research far enough to find out how long Mr. E. M. Ranch had been working there but he could have been a man, we will say, for instance, and I am not saying this to be valid—but he could have been a man that just hired out that day. Well, he wouldn't have known about it.

Mr. FJARE. What I am searching for is to find the responsible party or persons who could have recognized this hazard, whether he be a Federal inspector or whether he be a part of management or a part of the labor force. Do you understand what I am trying to get at?

Mr. HARTSELL. Well, if this bill isn't passed or enacted in Congress as I previously stated, in my opinion, it doesn't go far enough, and a direct degree of measure had to be enforced by management this fatality might have been prevented.

Mr. FJARE. Now in this particular case I gather that your recommendation would have been that management would have been forced to stop workings in that area; is that correct?

Mr. HARTSELL. No.

Mr. FJARE. Wasn't that what caused the cave?

Mr. HARTSELL. Having not been at the Lexington mine for a few years I don't know what the workings was. They might have been mining that area.

Mr. FJARE. Well, I gather from your testimony at the onset of this particular cave that you blamed the cave-in to local workings?

Mr. HARTSELL. Here is what I stipulated, Mr. Congressman, is the management might have been mining this area, which would be justifiably O. K. I mean they mine the places where they can get the ore

and everyone realizes that, but the hazards are there that someone should have been able to foresee.

Mr. FJARE. I agree, exactly, and that's the point I am trying to get across to me. You say someone should have known.

Mr. HARTSELL. That's right.

Mr. FJARE. And I agree that someone should know. Now I want you to tell me who you think that someone should be?

Mr. HARTSELL. I think it should have been the people directly connected with this area that was being mined, whether it should be the foreman or safety engineer or the boss.

Mr. FJARE. Or the miner himself.

Mr. HARTSELL. Or the miner himself.

Mr. FJARE. Well, we certainly agree on that. Now, will you point out to me how this bill or a bill which you would like to see enacted would do that?

Mr. HARTSELL. Well, I will take the National Safety Council's findings of fatalities and accidents happening underground. It says 97 men die out of a hundred from the violation of safety.

Mr. FJARE. On whose part, the individuals themselves.

Mr. HARTSELL. Regardless of whether its the individual or not its on the violation of safety. If safety was enforced, to be made to be enforced, it would be violation on the individual's part at all or he would have to be made to do that in order to work there.

Mr. FJARE. No bill is any good, no law is worth a thing unless it can be enforced; is that right?

Mr. HARTSELL. That's right.

Mr. FJARE. And it is not clear in my mind how you are going to be able to successfully enforce the type legislation to which you have reference. To a degree it can be enforced, undoubtedly, but a bill of that type has to be very cautiously drafted and its going to be a very tough job for this committee and Congress to do it. Now I fully appreciate and sympathize and understand what you are after. Its just a matter how it is going to be approached. I am not going to ask any more questions because I am doing so out of lack of ignorance which I want to know more about this problem. We have many more witnesses and maybe these questions will be answered as we go along, and I want to personally thank you because its been a contribution. That is all.

Mr. METCALF. Go ahead, Mr. Hartsell.

Mr. HARTSELL. Well, over the number of years since 1930 up to date there has been hundreds of men that have died underground. Some are from natural causes and by looking at the coroner's report some of them are from causes that perhaps couldn't have been helped, but looking at the overall safety total and measures against these fatalities, in 1944 14 men were killed; in 1945 11 were killed; in 1949 6 were killed. By looking at these years it looks like progress is eventually or finally being made in the cutting down of these fatalities. That isn't so, because in 1952—in 1954—no, pardon me, in 1952 21 were killed and last year 19 were killed. So safety as far as cutting down the fatalities actually looks like it might be going backward. This is some 12 years later in 1944 and 11 later to 1945 and more fatalities are occurring now than there were 10 or 12 years ago.

This is a good bill and I am sure you gentlemen have read it, and probably everybody here has; and I sincerely think and believe that this bill of enacted in the 85th Congress might start a plan. Now, plans don't start and get into functioning properly as soon as something goes into effect. Actually like a politician because the minute he gets in office he can't do everything right now, but this will be a start on the way to making and cutting the lesser fatalities that are occurring in the nonferrous mine.

The miner should someday be assured that he can kiss his loved ones goodby in the morning and be able to kiss them hello in the evening if an added degree of measure has been enforced for his protection and his only.

I want to thank you gentlemen for letting me give my testimony.

Mr. METCALF. Just a moment, Mr. Hartsell. You called a special attention to section 1 of the bill, and I want to call your attention to section 8 of the bill. I am referring of course to H. R. 9269 which was introduced by Congressman Kelley, but for this purpose I will also refer to my own bill, H. R. 9343 or any of the other bills. Which one have you before you?

Mr. HARTSELL. I have 11376.

Mr. METCALF. 11376. Is that McConnell's bill.

Mr. ELLIOTT. Yes.

Mr. METCALF. That's Congressman's McConnell's bill. Section 8 provides: the Secretary of the Interior shall create an advisory commission—committee—composed of not more than six members. Now this committee shall be composed of representatives of metallic and nonmetallic mine owners and of representatives of metallic and nonmetallic mine workers in equal numbers. The duties of this committee is set forth in subsection B and among them would be to set up a code, promulgated code of reasonable standards and rules pertaining to safety and health conditions and practices in metallic and nonmetallic mines to serve as a guide in making recommendations under this act.

Now, Mr. Hartsell, you represent the United Steelworkers of America. The bargaining unit for this area is the Mine, Mill, and Smelter Workers.

Mr. HARTSELL. Yes, sir.

Mr. METCALF. Suppose a committee of six is established and suppose the Secretary of Interior appoints the representatives of metallic and nonmetallic mine workers three mine, mill, and smelter workers. Would you still be in favor of this bill?

Mr. HARTSELL. I certainly would if it's to help and better the conditions of the workers who work in the nonferrous mines regardless who was appointed. I see that this bill was introduced by a man who actually likes labor and wouldn't just toss a good bill away or think against it or speak or talk against it because you and he never thought politically alike.

Mr. METCALF. Mr. McConnell is a very distinguished expert in labor legislation and has a fine record as far as labor legislation is concerned.

The point that I was trying to bring out is, in addition to inspection, annual inspection, and annual reporting procedure that is going to be made out of this bill, the significant change in the legislation from

what is now in existence to what would be contemplated under such legislation that we are considering is the establishment of this advisory committee which would be composed of not more than six people, and half would be represented by the employer and half by the labor organizations, and in view of the fact that there is competition among the various organizations, not only the two organizations that have been represented here, but the United Mine Workers and various independent unions. Suppose, for example, the Secretary of Interior reached down and bypassed the Steelworkers and the Mine, Mill and Smelter Workers and District 50 of the United Mine Workers and appointed representatives of three independent unions to serve on this advisory committee, would you still be for this legislation?

Mr. HARTSELL. Well, Chairman Metcalf, may I ask you a question?

Mr. METCALF. Well, I am the one that is supposed to be getting the information, but go ahead.

Mr. HARTSELL. Well, if you drew a bill up and you were connected with an organization, you supported that organization and was backed by it and believed in it and you drew a bill up, how would you answer a question if there wasn't a Steelworker or part of the Steelworkers appointed to this bill when the Steelworkers drew the bill up.

Maybe I might add this: that sitting within the audience the author of this bill is present, to actually get down to enlighten the facts that this board is concerned with and; if the chairman please, I would like to call on the author.

Mr. METCALF. Now, wait a minute. The chairman is going to call the witnesses. Of course the author of this bill—the only author of any of this legislation that's in this present audience—is the chairman of this subcommittee. These bills are drawn and introduced and sponsored by staffs of legislative committees but they are introduced by Members of Congress. We were talking about Mr. McConnell's bill a moment ago, and he is the author of that bill, no matter where the source of that bill was, and he approves it or recommends it or it doesn't get introduced; and so I want to remind you of that: that the only author of the bills before us represented here at this present time is the present chairman of this committee.

Now, these bills are introduced for the purpose of having some legislation before the committees and before the Congress as a starting point. It's very seldom that a bill goes through the processes of hearings, debate on the floor, hearings in another body, and debate on the floor in conference committee and comes out just exactly the way it went in. Many times in the course of hearings the authors of a bill, such as the present chairman of this subcommittee, change their minds about the specific language in the provisions of such legislation as a result of testimony such as you have given and other testimony that we are going to elicit during the course of these hearings.

Now, it seems to me after reading section 8—and I am the author of section 8—after reading section 8 that there is grave danger that a Secretary of the Interior who was unfriendly to labor or a certain segment of labor might appoint an advisory committee that would recommend standards that were so low as to be of relative unimportance as far as carrying out the purposes of mine safety. It seems to me that there is an opportunity that a Secretary of the Interior who was hostile to management might be so selective in the appoint-

ment of the advisory committee that they would establish and promulgate standards that would be of such a high level that they would be impossible of performance.

Now with that doubt in my mind I am going to ask you and some other witnesses as we go along questions as to how you feel about this section if one of those things happened.

Mr. HARTSELL. May I read section 11 first?

Mr. METCALF. Surely, you can refer us to section 11.

Mr. HARTSELL. Section 11:

> For the purpose of this act the term "commerce" means trade, traffic, commerce, transportation and communication between any State, Territory, possession, or the District of Columbia, and any other State, Territory, possession of the United States, or between any State, Territory, possession, or the District of Columbia and any foreign country, or wholly within a Territory, possession, or the District of Columbia or between points in the same State passing through any other State, and through any Territory, possession, or the District of Columbia or through any foreign country.

I think that without this section 11 to cite things that are a betterment to the bill there would be, as you mentioned yourself, what if some person was appointed to appoint these people who might be prejudiced toward labor or prejudiced toward management, but section 11 actually makes the whole bill good. In my opinion in trying to answer you as best I can, Chairman Metcalf, it thins the chances that anything or anybody takes whether he votes in a primary election or general election or anything else of what actual policies and truth might be behind the person he is voting for where they will benefit the bill and laboring people connected with nonferrous industry or where they might benefit the farmers or whatever thing in my opinion trying to answer you the best I can.

Mr. METCALF. In other words, you say that whenever you by legislation delegate responsibility or authority to an individual by such delegation you must necessarily take a chance if there can be maladministration of such authority?

Mr. HARTSELL. Yes.

Mr. METCALF. And that we have to presume that labor and management would be equally and impartially and fairly represented on such an advisory committee?

Mr. HARTSELL. Yes, sir.

Mr. METCALF. I think that's all.

Mr. ELLIOTT. I believe the language is that such a committee of six persons shall be composed of representatives of mine and quarry owners and representatives of quarry workers in equal number. I can't think of any way that that can be improved upon as legislative language; can you, Mr. Hartsell?

Mr. HARTSELL. As I said before——

Mr. ELLIOTT. It says that you got a committee of six and that they will be chosen by the Secretary of Interior in equal numbers from the representatives of the mine management and representatives of the people who work in the mines. It's hard for me to see how that can be improved upon. Do I understand the question?

Mr. METCALF. Yes; that's right.

Mr. HARTSELL. I imagine that the only way that things will ever be worked out is if both people participate in trying to work things out together, meaning management and labor. Is that what you are referring to?

Mr. ELLIOTT. Well, I was just referring to the—just to the legislative language of the bill, and that language says that this advisory committee appointed by the Secretary of the Interior shall be chosen and a committee shall be appointed equally from representatives of the mine management and ownership and representatives of the mine quarry laborers, and I was thinking about this question purely from a drafting standpoint and was going to say or did say that I didn't see how that could be improved upon very much, but I wonder if I was wrong or if you have some ideas how it might be improved. I don't think that you can say that—I don't think that the Secretary should be restricted to appointing representatives of management restricted to certain kinds or sizes or classes of mines and likewise I doubt that in his selection of people to serve on that committee that he should be restricted to appointing people from certain types or kinds or classes of unions. I just don't think that would work out for good legislation.

Mr. METCALF. I wonder if my friend from Alabama would yield?

Mr. ELLIOTT. Yes.

Mr. METCALF. I think I will agree that that's about as good as legislative language that is possible, as good as legislative language as is possible.

My inquiry is, Is that the best way to promulgate such necessary rules and regulations by means of an advisory committee or would it be better to have the Secretary of the Interior to do it himself after studies by the Bureau of Mines, or there may be other ways to do it; and the reason I suggested that to Mr. Hartsell is that I can see an opportunity for the promulgation of rules that might not be quite the satisfactory ones or is this the way to do it? I think if this is the way to do I think we have the legislative language that accomplishes it.

I think he has stated his position that when you give somebody power to appoint you assume that they are going to appoint fairly and impartially.

Mr. ELLIOTT. I like the gadget or the mechanism of an advisory group for any executive officer. I have tried to observe it through the years and it seems to me that you probably get—at least in my judgment you get more considered recommendations and promulgations where you have a committee such as this to sit down with, and officers such as the Bureau of Mines, to go over the question with him. I guess what I am saying adds up to the fact that I am impartial to this language myself.

Mr. METCALF. Thank you very much, Mr. Hartsell, I think you have made a contribution by your specific examples and, of course, by the answer that you made to the questions propounded.

Mr. HARTSELL. Thank you, gentlemen.

Mr. MECALF. I am going to call two witnesses out of order and the first witness will be Mr. Isaacson, who has to get away, and he will testify at this time. Mr. Isaacson.

Mr. Isaacson, your name is Elmer C. Isaacson?

STATEMENT OF ELMER C. ISAACSON, MINER, BUTTE, MONT.

Mr. ISAACSON. Elmer E. Isaacson.

Mr. METCALF. And you live in Butte?

Mr. ISAACSON. Yes.

Mr. METCALF. And you are a former Butte miner?

Mr. ISAACSON. Yes.

Mr. METCALF. And you want to tell us about an accident that occurred to you?

Mr. ISAACSON. Yes, sir.

Mr. METCALF. Well, you go ahead and tell in your own words.

Mr. ISAACSON. Well, in 1953, through a fall of ground, why I accidentally got hurt and was off for, well I guess I was off for around 18 months, but after a year I guess they figured that I could go back to work and they offered me a settlement which I didn't think was right, so I went to another doctor and asked him if he thought that was right, and he said he didn't; so I went on from there and then in the fall I got a settlement from the company but then I couldn't go back to work again.

Mr. METCALF. Well, we have no Federal workmen's compensation that might be the source of something, but what we are interested in is how your accident occurred.

Mr. ISAACSON. Well, I was working in a stope at the time being and a piece of rock hit me on the back, about 200 pounds.

Mr. METCALF. And you think that——

Mr. ISAACSON. Well, the time being was I went to the hospital, and I was transferred to the hospital, and in 3 days they turned me out and said there was nothing wrong with me, and then I laid around the house for 2 weeks and then I went to Fort Harrison. They told me there that I had a compressed fracture and I came on back and they put me into a cast here and then I was in the cast for almost 4 months.

Mr. METCALF. As a result of this fall of rock?

Mr. ISAACSON. Yes.

Mr. METCALF. Do you think that the fall of rock could have been prevented by proper inspection?

Mr. ISAACSON. Well, I wouldn't say that; it was more or less lack of having the material down there, yes, I would say, but there wasn't any at the time available. Well, we didn't have any lagging, so I guess that's how it happened.

Mr. METCALF. Do you have any questions, Mr. Elliott?

Mr. ELLIOTT. You were up in the stope?

Mr. ISAACSON. Yes. We were filling the stope at the time being. We were filling one.

Mr. ELLIOTT. What do you mean by "filling"?

Mr. ISAACSON. Well, every time you take some ore out on a piece of ground it's got to be filled, and they were dumping granite and sand down in this stope and that drops about 200 feet and, therefore, why a piece just fell off and accidentally hit me.

Mr. ELLIOTT. Was it a piece of the material being put back?

Mr. ISAACSON. No.

Mr. ELLIOTT. Just a part of the top?

Mr. ISAACSON. Yes.

Mr. ELLIOTT. Well, could you notice anything wrong with the top yourself?

Mr. ISAACSON. No; most of that ground is broke off anyway and its mostly all broke off, and we had to crib it and things like that.

Mr. ELLIOTT. You had to what?

Mr. ISAACSON. We had it cribbed up where it shouldn't have fell, but it did fall through the jar of the stuff and the other rock coming down the chute.

Mr. ELLIOTT. It's sort of an accident that you wouldn't easily foresee, wasn't it?

Mr. ISAACSON. Yes; it was. If I could have foreseen it it wouldn't have happened.

Mr. ELLIOTT. At least it wouldn't have happened to you; would it?

Mr. ISAACSON. No; it wouldn't.

Mr. ELLIOTT. That is all. No further questions.

Mr. METCALF. Thank you, Mr. Isaacson, for coming and telling us about your accident.

Mr. ISAACSON. Thank you, gentlemen.

Mr. METCALF. The next witness that I am going to call out of order is Mr. Jack Toole. Mr. Toole is going to present a statement for the record. Will you come forward, Mr. Toole?

The statement that he presents is from State Senator LeRoy Anderson who is a candidate for the same position that the colleague on my left holds. I submitted the statement to Congressman Fjare, and he has very graciously consented that it be submitted at this time; so without objection, we will hear from you, Mr. Toole.

Mr. TOOLE. Would you like to have me read the statement?

Mr. METCALF. No; I think if you will just submit it for the record that will be satisfactory.

STATEMENT OF JACK C. TOOLE, SHELBY, MONT.

Mr. TOOLE. My name is Jack C. Toole, Shelby, Mont., and I am submitting this statement on behalf of LeRoy Anderson, candidate for Congress in the eastern district.

Mr. METCALF. Unless there is objection, it will be included in the record, inserted in the record at this point as if read.

Mr. TOOLE. Thank you very much, Mr. Chairman.

Mr. METCALF. Thank you very much, Mr. Toole.

(Statement of LeRoy Anderson, candidate for Congress in eastern district, State of Montana, is as follows:)

My name is LeRoy Anderson. I have been a member of the State legislature since 1947. I am now the Democratic nominee for Congress in Montana's Second Congressional District.

I have worked for safer conditions for Montana miners and other laborers as a member of the legislature, where I secured an appropriation of $5,000 to begin drafting of industrial safety codes, sponsored legislation placing silicosis and other occupational diseases under workmen's compensation, and sponsored an amendment which proposed removal of the 500-week benefit limit to permanently disabled industrial workmen.

I wish, in my brief remarks, to point up to you the high cost of unsafe working conditions in Montana metal mines—in human values as well as dollars and cents. I recognize in this regard the obligation of the State legislature, rather than the National Legislature which this Metcalf subcommittee represents. I do believe, however, that your subcommittee should have before you information on the high cost of unsafe mine conditions in and to the State of Montana, to supplement the other technical and general information which your subcommittee is gathering in your comprehensive national survey of mine safety conditions.

The act under which State welfare payments were made to silicotics went into effect on July 1, 1941. Since then several amendments have increased payments from the initial level of $30 per month to the present level of $65 per month. These payments are made to persons who are totally disabled and who have been

residents in Montana for 10 years or more immediately preceding the date of the application.

Since the effective date of this act almost $4½ million have been expended for silicosis benefits. During the past 8 fiscal years the number of silicotics drawing such benefits in any 1 month has rarely gone below 600, and has been as high as 667. Roughly, 100 cases per year are added to the rolls and approximately the same number are removed from the rolls each year. About 80 are removed each year because of death.

The $4½ million spent out of public funds for silicosis benefits represents an average expenditure of $80,000 for each of the Montana counties. During the same period from 70 to 75 percent of all silicotics receiving benefits come from Silver Bow County.

Placing silicotics on public-welfare rolls is a heavy drain upon State funds. It saves the mining industry millions of dollars which might otherwise be spent for compensation and does not afford any real benefits to the miners themselves. The low level of benefits compels many miners to continue working (when they should not be doing heavy work) in order to maintain themselves and their families.

This probably also hastens the death of many miners. Were they drawing some decent compensation for silicosis, they might be able to prolong their life for some years. A decent compensation program such as we now have in many other States would place the responsibility for silicotics on the mining industry.

Experience in every other State has shown that when a mining firm is made to pay for illnesses and disabilities caused by work, then conditions in the mine tend to improve. The companies find in the long run it is cheaper to do what is necessary to get rid of the dust than to pay heavy compensation costs.

Thank you.

LEROY ANDERSON.

Mr. METCALF. The next witness is Mr. Jack Hihnala. Your name is Jack Hihnala; is that right?

STATEMENT OF JACK HIHNALA, MINER, AND RECORDING SECRETARY, LOCAL 6001, UNITED STEEL WORKERS OF AMERICA, AFL–CIO, BUTTE, MONT.

Mr. HIHNALA. Yes, sir.

Mr. METCALF. Are you from Butte?

Mr. HIHNALA. Yes; I am.

Mr. METCALF. Are you a miner here?

Mr. HIHNALA. Yes; I am.

Mr. METCALF. In what mine do you work and what kind of work do you do?

Mr. HIHNALA. The Leonard mine, on what they call the fire fill.

Mr. METCALF. And you are here representing the steel workers also?

Mr. HIHNALA. That's right.

Mr. METCALF. Well, you can proceed and give us your testimony. You have no prepared statement?

Mr. HIHNALA. No.

Mr. METCALF. Just go ahead and tell us what you want in your own words.

Mr. ELLIOTT. Well, Mr. Chairman, let me ask the gentleman a qualifying question.

Now, you say you represent the United Steel Workers; is that right?

Mr. HIHNALA. That's right.

Mr. ELLIOTT. In what capacity do you represent them?

Mr. HIHNALA. I didn't get a chance to give my name yet, if you don't mind.

Mr. ELLIOTT. Yes, sir.

Mr. HIHNALA. Mr. Chairman and members of the subcommittee, my name is Jack Hihnala. I am the recording secretary of the United Steel Workers of America, Local 6001, AFL–CIO. Does that answer your question?

Mr. ELLIOTT. That's the local in this area here?

Mr. HIHNALA. That's right. I put my first shift in the Butte mines on July 2 or 3 of 1936, and I found during my years down these mines that the safety conditions aren't what they should be. Out of these years I put down the mines, I would say that I put about 15 years, actual working years, in the mines, approximately.

I have a statement or an accident here that I would like to report on. It's on Ed Backa, that's his name. He was working in the Kelley shaft. He is a shaftman, or was a shaftman.

While drilling a hole in the guide, standing on the hurricane deck of the cage—he was on the deck alone—the engineer moved the cage resulting in this man falling between the deck of the cage and the concrete wall. He was hanging there for quite some time before they got him out. He did last a few days, but he died.

Now to my understanding there were men working in both compartments of the shaft at the time; the bells were in order on one side or in one compartment, and they were out of order on the other side or compartment. Arrangements were made to have a double signal on one side ringing on just this one bell to move one cage in one compartment or the other, and a single signal to move the cage in the other compartment. Now the engineer got a bell and moved the cage, and he moved the cage from this side that Backa was drilling the hole in the guide, therefore falling between the cage and the concrete wall.

There was a lack of safety measure right there, because they didn't have the bells in working order in the other compartment, and it would be confusing to the engineer at times, because these bells there are so many to remember in the shaft, and for the engineer to remember all these bells; and I believe that could have been prevented at that time if proper safety measures were taken.

Do you care to ask me any questions on that?

Mr. FJARE. Just perhaps this. You mentioned that the bells were not in working order. Was that a known fact for any period of time prior to the accident?

Mr. HIHNALA. I wouldn't know that part of it.

Mr. FJARE. Well, I think that's a pretty important thing for me to know.

Mr. HIHNALA. Yes; it is important, but those men shouldn't have been working in both compartments at one time with just one set of bells.

Mr. FJARE. Had they been ordered to work in both compartments?

Mr. HIHNALA. To my understanding, yes.

Mr. FJARE. In other words, your testimony would indicate those men had been ordered to work under conditions which were hazardous?

Mr. HIHNALA. Were what?

Mr. FJARE. Hazardous?

Mr. HIHNALA. Yes.

Mr. FJARE. Known to be hazardous; is that correct?

Mr. HIHNALA. That's right.

Mr. FJARE. May I ask one further question? You answered my question by saying that those men were working in this condition knowing that it was a hazard?

Mr. HIHNALA. Yes.

Mr. FJARE. That was your answer, was it not?

Mr. HIHNALA. Yes; that's right.

Mr. FJARE. What happens to a man if he recognizes that as being a hazardous condition? Let's take this case that you are talking about specifically, and the gentleman to whom you are referring to as having perished as a result of an accident.

What in your opinion would have been the reaction or the results or the consequences had he refused to do this job until a correction had been made and made it a safe place to work?

Mr. HIHNALA. Well, these conditions shouldn't have been there in the first place.

Mr. FJARE. I will agree, but you agree that they were known?

Mr. HIHNALA. Yes.

Mr. FJARE. Now, if it had been me I think at the moment I would say to myself, Well, now what is going to happen if I refuse to work in there until they fix it and I know it's a safe place to work?

Mr. HIHNALA. Well, there are two consequences to that. The man might be fired for refusing to work in that, and then again he may not be fired. It would be upon to the boss, I presume to do either one of those things. If he refused to go down the shaft the——

Mr. FJARE. Then what you are saying to me, you are saying that if I as a worker refused to work in a place which I know is recognized to be hazardous I am subject to being fired perhaps?

Mr. HIHNALA. Yes.

Mr. FJARE. Which means that the boss will go and get somebody else to do that job since I wouldn't do it; is that correct?

Mr. HIHNALA. That's correct.

Mr. FJARE. Or will the boss see that something is done about correcting that hazard?

Mr. HIHNALA. Well, he might go and get somebody else to go in the shaft, and then again he might have that bell fixed up right then and there as soon as possible. That is where the troubleshooter comes in that the electrician was talking about. The troubleshooter would have to come and fix those bells because they are electric bells; the troubleshooter would have to come if they were radio bells, too.

Mr. FJARE. That is all.

Mr. ELLIOTT. Mr. Hihnala, do I understand that you endorse and commend for our consideration the bill before us by Mr. Metcalf and others? Do you desire to see that bill enacted into law?

Mr. HIHNALA. Yes; I would like to see that bill enacted into law because I believe it is a start in the right direction; and, to put it in my own words, every crew has a boss and the boss is the one that sees that all the orders are carried out. In this case the Federal inspector would only be allowed to give suggestions but he would be a sort of a boss over all the mines in the State or in the United States and Territories.

Mr. ELLIOTT. That is all.

Mr. METCALF. Do you have another case that you want to tell us about.

Mr. HIHNALA. Well, I was going to talk about—well, the committee went down the mine here in the last 2 days, and let the committee

know that before the company gets information beforehand, letting the company know that there will be a committee coming to inspect these mines more or less, and the company immediately proceeds to clean up these drifts, working places, and a certain level or levels and put them in the best possible condition that they can with the time that they are allowed at that time.

Mr. METCALF. Will you permit me to interrupt you there? This committee has no power to require the Anaconda Co. or any other mineowner to let this committee go down into a mine, nor are the members of this committee either qualified by experience or as a result of these hearings to recognize safe or unsafe conditions in a mine. We are not mine inspectors.

As chairman of this subcommittee because I represent the city of Butte, Mont., I am rather proud of the mining industry in this city, and I requested that the Anaconda Co. let us inspect two typical operations. We didn't want it to be the worst operation or the best operation in the city of Butte, but a typical sort of a mine, one ordinary vein type of copper mines and the other the block-caving type in the Kelley shaft; and I think graciously and courteously the Anaconda Co. administrative staff took time off and gave us the opportunity to inspect those 2 mines to the detriment of the production in those 2 mines on that day. Personally, if they cleaned up the mine a little bit I am glad they did so because I climbed high enough and tramped far enough as it was under the conditions that were in existence, but we are not mine inspectors nor are we going to have a report on individual instances of unsafe conditions; we merely wanted as a committee to see a typical mine operation so that during the course of future hearings of the committee we would understand the terms that were being used and be able to picture for ourselves the conditions under which the miners would testify to.

Mr. HIHNALA. And thank you. Now that is the reason why there should be a Federal inspector to go down these mines all around the States to inspect and to give suggestions as the bill reads right now on safety measures that could be taken care of at these certain respective mines wherever they may be.

As you just stated that the Anaconda Co. does not have to let anybody down these mines if they do not want to, or any mine in the State or in the United States, to my understanding. That would apply I imagine to all the mines in the United States.

That is the reason why this bill is a good bill, to have this Federal inspector as I said to inspect and to give suggestions on safety measures that could be taken up in the mines. Now, as I said, they cleaned up these levels. This is not a general practice and these levels are not cleaned up like that all of the time.

There are quite a few hazardous conditions that you men did not see; they were cleaned up. If they done this all the time and kept all the levels in such good order as you men did see there would be fewer accidents and fatalities down the Butte mines—down the mines, any mine as far as that goes, let alone Butte.

Mr. ELLIOTT. Which one of the mines do you work in?

Mr. HIHNALA. Well, sir, I worked at the Stewart, the Belmont, the Mountain Con, the Kelley, the West Colusa. I am working at the Leonard right now.

Mr. ELLIOTT. Don't misunderstand me, I am not hostile to the testimony you have given, I am just trying to get into the record these facts about it. You work where?

Mr. HIHNALA. I am working on what they call the Leonard fire fill.

Mr. ELLIOTT. That's not the one we went in, is it?

Mr. METCALF. No. He has worked one that we went in, the Mountain Con, and the Kelley.

Mr. HIHNALA. Yes; I worked in both of them. I have here, Mr. Chairman—I would like to have the following data incorporated in the record. It is a table from the Bureau of Mines showing the principal causes of injuries at metal and nonmetallic mines from 1932 to 1954.

(The matter referred to is as follows:)

UNITED STATES DEPARTMENT OF THE INTERIOR,
BUREAU OF MINES,
Washington 25, D. C., August 28, 1956.

Mr. ALEX CHRISTIE,
United Steel Workers of America,
1001 Connecticut Avenue NW., Washington, D. C.

DEAR MR. CHRISTIE: Attached is a tabulation on principal causes of injuries at metal and nonmetallic mines that you requested today from Mr. James Westfield, Assistant Director, Health and Safety. Please call on us if we can be of any further assistance to you.

Sincerely yours,

JOHN A. JOHNSON,
Chief, Division of Safety.

Mr. HIHNALA. And this is the enclosure. Would you like to have me read some of these, of the fatalities in this?

Mr. METCALF. I would like to have you pass that table to us for inspection for just a moment now. I may interest you to know——

Mr. HIHNALA. O. K.

Mr. METCALF. It may interest you to know that Mr. Johnson, of the Bureau of Mines, did accompany this subcommittee on its tour of the Minnesota mining area a few weeks ago.

This table is already in the record, it has already been inserted in the record in previous hearings, but if you want to make reference to certain points that are brought out by the table in your testimony that will be quite all right. The table itself is already a part of the record of this committee.

Mr. HIHNALA. These are the principal causes of injuries at metal and nonmetallic mines 1932 to 1954:

Cause: Falls and slides of rock or ore.
Underground mines: Fatal accidents, 1,043; nonfatal, 35,076; fatal and nonfatal, 36,119.
Open-cut mines: Fatal, 92; nonfatal, 1,542; fatal and nonfatal, total, 1,634.

Then there are statistics here on handling material.

Material in the underground mines, open-cut mines and all mines.
Hoisting and haulage accidents.
Hoisting in underground mines, haulage in underground mines, haulage open-cut, and all mines.

Then they have accidents in machinery. Accidents because of explosives; accidents because of electricity, and all other causes.

Total of all causes, fatal accidents: Underground mines, 3,051; nonfatal accidents, 216,637; fatal and nonfatal, 220,688.

That's for the underground mines.

Open-cut mines: Fatal, 354; nonfatal, 18,893; total, fatal and nonfatal, 19,247.
All mines: Fatal, 3,405; nonfatal, 236,530; fatal and nonfatal, 239,935.

I believe that's all that we would need to be read out of this.

Mr. METCALF. Yes. I also want to inform you that table 2 which is the Principal Causes of Injuries at Quarries is also part of the record, and all the material that you have read in addition to all of the material in the table has been incorporated into the record and was testified to and identified by Mr. Johnson. Mr. Christie received the letter.

Mr. HIHNALA. I am glad to hear that, thank you.

At one time down those Butte mines all drifts and raises were required to use what is called an air blast. These air blasts have fallen into disuse, and because of that the air is polluted more with dust than it should be.

At one time there were air blasts or sprays, commonly called sprays, in the shafts. Why these were taken out and why these are not being used I do not know.

Mr. ELLIOTT. Will you describe an air blast to me?

Mr. HIHNALA. An air blast is a connection that is put on or attached to the airline and the waterline, and when a round—that is when they spit a round to blast rock the miner turns on this air blast. Then this air blast is blown when the round goes off and the dust will not rise so much then, it stays there and is wet down; it stays right there instead of going through the air courses.

Mr. ELLIOTT. What system has taken the place of that now?

Mr. HIHNALA. None that I know of. And then they had sprays in the shafts. There a little attachment that they put in the shaft and the station tenders had to put these sprays on causing a spray of water to shoot out into the shaft while they were loading these skips with buckets as you know. There is dust comes from loading these skips and going down the shaft into the air courses. Why these sprays were taken out I do not know. They did minimize the dust in the shafts and in the air courses.

At one time the company had men wetting down the drifts with spray hoses. Some of the miners in Butte, though the newcomers here do not know what a spray hose is today.

There were men spraying down these drifts to keep down the dust. That rule was not or is not generally practiced right now, and that is a health measure again that should be taken care of; and I believe if this bill goes through a Federal inspector would make suggestions to the extent in following these safety rules that should be followed right along.

Then speaking of dust. On the fire fill crew they have what they call a gunnite crew. This crew sprays cement called gunnite on to brattices and to complete what is called a hitch. These men must wear respirators while working on this job, but the air is filled with cement dust again resulting in poor health conditions where another little spray attached to the waterline would minimize the dust content of the air in this area where they use these gunnite guns; and they transport these guns from mine to mine, level to level, but as long as they can pack a gun like that from mine to mine and level to level

they could also have some sort of spray go along with those guns for health measures.

At one time, I believe there would be a few places left yet, there were water connections approximately every hundred feet in the drifts. These connections were used to wet down the drifts by these men that wet them down, and they were also used to wet down the manways of the working places such as stopes. They haven't got these connections every hundred feet now and as a result walking behind men on the 1,600-foot level of the Leonard—it is called the Kelley drift—about 15 or 20 of us walking out the drift the first three men have got very little dust but as the men go by they create dust coming from walking up the drift whereas this could be eliminated.

That is another reason for Federal inspection to suggest these safety measures that should be lived up to.

I believe that is the end of my testimony.

Mr. METCALF. Thank you very much, Mr. Hihnala.

Mr. FJARE. I assume that from your testimony that you are saying that working conditions are worse today than they have been in the years past?

Mr. HIHNALA. Correct, as far as the dust is concerned and the fatalities that happen and which could be prevented.

Mr. FJARE. Have you seen any part—or any effort on the part of the company or management to correct the dust conditions in the mines?

Mr. HIHNALA. Not lately. I did bring up a grievance here at the Tramway mine about 3 years ago. I couldn't say exactly whether 3 or 4 years ago. We asked the management at that mine at that time to put a spray in the shaft below the 1,300-foot level of the Kelley mine—this is in the Rarus shaft. The management at that mine said it would be done, and to my understanding they did start the work on it but I never did see the spray myself but I know it never was used, so I do not know if that spray ever was put in the shaft.

Mr. METCALF. Thank you very much, Mr. Hihnala, for your testimony. We were very pleased to have you with us.

The next witness we are going to have is Mr. Eaglowski. Just a moment, Mr. Eaglowski, you can sit down.

Before the next witness goes on I want to suggest that at 3 o'clock my colleague, Congressman Fjare, will have to leave the hearing to catch a plane for a commitment that he has already made elsewhere.

I want to express my own personal appreciation to Congressman Fjare for participating in the hearing as much as he could. I feel that he made a genuine contribution and I know that it was a real sacrifice for you to come over here of a very busy schedule that we all have at this time of the year and to be here to participate in these inspections and this hearing.

I am personally gratified and I know that all who have participated are also gratified. I want to thank you, Mr. Fjare.

Mr. FJARE. Thank you, Mr. Chairman, and I also want to express my personal appreciation not only to the 2 labor unions that are represented here and the people whom they represent and the management and everyone else who has testified, and also to my 2 colleagues on the committee. I only wish that I could have remained on with

you through the rest of your tour including here, but as I have mentioned I have made these commitments and I have got to stick to them. So at 3 o'clock sharp, which is 5 minutes from now, I will have to get up and excuse myself.

Mr. METCALF. We will all understand. All right, Frank, give your name and whom you represent.

You may go ahead.

STATEMENT OF FRANK EAGLOWSKI, MINER, AND MEMBER, UNITED STEEL WORKERS OF AMERICA, LOCAL 6001, BUTTE, MONT.

Mr. EAGLOWSKI. My name is Frank Eaglowski, and I belong to the United Steel Workers of America, AFL–CIO, Local 6001.

I worked in the mines in Michigan for around 15 years. I worked 9 months in a quarry in the Aleutian Islands during the war, and I worked over 2 years here in Butte and then I went to California and I worked there approximately 2 years and I am back in Butte now for over 5 years.

I think that this bill that we are discussing today is necessary and will be a starting point to see that safety first and safe conditions are carried out by your committee.

One of the points that I have here is ventilation. I worked on the Forty-two Hundred on the south side of the Mountain Con mine and for the last 3 or 4 months every dinner hour there were whole rounds that were blasted. According to the rules mis-holes, bulldozing, or plugging for timber is only allowed, but your boss will come around and tell a party to drill out for a cap sill or shoot a round and if anybody says anything say that you are plugging for timber. There is a difference between using a box or two of powder and leaving it go at dinner time and in using, say 5 or 10 sticks of powder. And that abuse was going on for the last—well, for the last 3 months there might have been only 4 or 5 dinner hours that there was no smoke.

The air course came from two drifts and went up the drift toward a cooler. It was like a T there and we would eat our lunch there, and if it wasn't blasting—if it wasn't blasts made on one end it was on the other and sometimes on both ends, and a lot of men not only breathing the dust but getting sick and getting headaches from the powder fumes and smoke.

Now, this was going on and I heard the boss tell different miners to blast at dinnertime, and in one instance they couldn't make it and did not blast and it was not necessary for them to blast dinnertime because they were mucked down anyway and they had to get the muck out. So I can't see any reason for having a miner blast dinnertime outside of showing authority, or I don't know what it is, but it doesn't even make commonsense to me. The smoke that goes through the whole air course and contaminates the air through the whole air course and of course it maybe affect, oh, I would say offhand maybe 30 or 40 men, say between 30 and 50 men.

In the stopes where they got a large amount of rough ground instead of just blasting the boulders they should supply the stope miners with jackhammers where they could plug them instead of using 10 sticks of powder 2 or 3 sticks would do the same amount of damage with a minimum amount of gas fumes and smoke.

On this beat that was going on continuously one of the grievance men, Mine, Mill grievance men, works on the same beat and it doesn't seem that he could do anything about it to stop it. I heard him tell one party but he contended that he plugged, but it was an awful amount of smoke. Still I think that real responsibility should go right on the boss because when the boss tells a man to blast and you have no other alternative but to quit and if you don't blast and quit he will will find some other fault and make up some excuse like not getting the service or something like that so he will run you off anyway. So you either got to blast or you might as well quit instead of being run off.

Another thing I got here is falling rock.

Mr. FJARE. Excuse me, I have to leave, but I wish I could stay for the rest of the session.

Mr. METCALF. Proceed with your testimony, Mr. Eaglowski.

Mr. EAGLEOWSKI. We were driving a New York drift—that's an exploration drift—on the Forty-two Hundred; it was the Forty drift. Well, after they drove it for quite a number of feet they decided to pull out and put in a diamond drill. Well, I was working on a motor and I hauled in the diamond drill and other equipment to service the place. Well, about 20 feet or so from the switch, 25 feet, the back was dribbling between the timber and I reported it to the boss. I told him, "It's pretty bad and I hate to go into it," and that the back was dribbling pretty much. He told me, "Well, the whole drift is dribbling on one end anyway; it's nothing new." Well, the diamond drill crew got through drilling and we had to pull them out. We pulled out all the equipment and the following day the back came down and broke the timber and there were men working on that for 3 or 4 weeks. That could have been eliminated if the boss checked that over and saw that proper measures would be taken to crib it up or whatever it needed—whichever way he figured—and it would eliminate the danger.

There were no two ways out of that drift. If that happened a day earlier while we were in there, there were 4 or 5 of us back in that hot drift for quite a few number of hours, if we wouldn't suffocate before we got out.

If things like that were taken care of it would not only help to prevent accidents but also there would have been a minimum amount of work that would have been done to repair this place before it flopped, and after it flopped it took quite a few man-shifts. I don't know if they are through with it but they were nearly through with it last week; but I don't know how things are now.

And a few days ago, last week sometime, one of the motors got off the track and so we hooked a block up; the boss was with us and we hooked it up on a rockbolt. Well, we tried to put the motor back on the track and while we were hooking up the block one of the motors was standing on the wrong side of the mat and previous to that while we were lifting it up it pulled the mat away from the ground to a certain extent. Well, I was running another motor to try to get it on and one of the motormen was standing by that mat and it started to dribble under the ground and I hollered at the motorman and a slab came down, and he jumped just in time when the slab came down and it busted his shoulder, and if it would have caught him right away it would have killed him or crippled him so bad he would have to spend

months and months in the hospital. When the slab came down the only thing handy there was a steel and I barred down the worst part that I could, and there was some more loose hanging up behind the mat which should have been taken down, which it wasn't. Well, the motor was off the track again and the men were working putting blocks under the wheels and walking past that loose ground. Of course we were watching it, but as far as I see it when anything like that arises it's up to the shift boss to see that that ground should have been properly taken care of. The additional loose that was behind should have been barred down and if necessary it should have been rerockbolted and all that muck cleaned off the track and that switch fixed; the switch was haywire anyway.

Well, one of the things is that the ground is not being taken care of properly around the rockbolts. Time and time again ground is rockbolted that should be timbered, and the ground keeps on dribbling around the rockbolts and at times slabs come down and keep on falling on the track; and an incident happened to me about 4 months ago. I went in a drift and it was pretty near dinner time and I put a lagging out and sat down and opened my bucket up and just sat down and was going to eat a bite of my sandwich when a piece of slab come down and caught me. It missed the bone and just missed an artery in my neck. Well, I was disabled from work over 2 weeks on account of that. Well, it just happened that I was there at the time when the rock dropped, but things of that nature are happening all the time but it's lucky that persons are not around there. It's pretty wet in there and the water is real hot and it's wet all over and it washes the faulty rock from behind the hard rock. Ground like that should be timbered because as a rule rockbolts won't hold up. A lot of driftmen that I know that work in that drift there don't stay long in it. I heard them say they would never drive any part of that drift without timber. Now, they only timber where they put the chutes in, so ground like that should be taken care of and it's up to the bosses to see that it's taken care of because they are ones that put the men to work and see that the work is done. They are in a supervisory capacity and they should know safety first and they should have a certain amount of knowledge of ground and they should see that stuff like that is taken care of; and if they haven't got the knowledge they got a lot of oldtimers to give them ideas as to how the work should be done.

There is one place back on that same beat where all the caps are cracking and the ground is taking pretty much weight. While they stulled they put additional braces alongside of the post, really it's the back, and the caps are cracking and the old stringers that are there they are all there. That can possibly fall in the near future and it should have been taken care of differently from what they did. They are going to take the pillars out anyway from up above, I imagine they will, and that timber will have to be changed when they do and there wouldn't be any additional work if it was done now but it would be safer until they are ready to do that work.

Another thing that was happening was in the last 6 to 9 months taking men off the cleanup work. Before that I know on that beat you would have had at least 2 men inside cleaning up the track and picking up old timber and loading it and taking it out of the way

and putting it in old headings or getting rid of it one way or another, or bringing it to the station; and then there would be 1 or 2 men on the ditch, but the last 6 to 9 months those men were eliminated and the drifts get pretty dirty with stuff along them. Then when you get them cleaned up with a mucking machine you got to sneak by most of your stuff because the boss wants it mucked up under the chute and you can't go and get a timber truck and start hauling the old timber and stuff because you won't be obeying orders and you won't last long.

I don't know if it's a part of an economy plan as far as the A. C. M. Co. goes or what it is, but it seems to me they could afford to keep the place in halfway decent shape, especially under the chutes; and your motormen just clean up just to get by because they got to get the rock out, and I can't see why there shouldn't be more cleanup men. There is a lot of oldtimers not good for anything else, and they got pretty much dust, and so those jobs would be well for them and to clean up the drifts.

Another thing that I got on my list here that's happening on a beat that I work and that is the lack of proper care of equipment.

There are three motors running on the south side where I work and the last time not one of them had any brakes, and as far as I know since I started to work on that beat only one of them had brakes, and they weren't properly adjusted, and now that motor never had brakes, I would suppose, for a month. No one would think of operating a car or riding on a train without brakes because they are very necessary. In case you can't plug it and you miss that first notch or your switch throws out, your stall switch throws out, if you got the brakes it will stop the motor, and if you are coupling cars or uncoupling cars and you are downgrade or hooking on to the motor that's off, you got to keep on continually plugging it, and while you are putting a rope or cable or whatever you are going to use and when you open the ventilation doors, you got to keep on hitting the notches or have the swamper go ahead and open the door, where with brakes you could stop the motor and get off and go on and open the door and keep on going.

Well, these brakes weren't taken care of and an incident happened when I just got on the motor 5 or 6 months ago when one of the bosses took the slusher bucket off of the station and he did not throw the switch. I was coming with a load of full cars and I never noticed the switch, and there was about 4 or 5 mechanics working on a mucking machine and the assistant foreman was there, and when I hit the switch I hollered and all of them scattered and I bumped into the mucking machine and the motor stopped. Well, it was lucky that I noticed them and hollered and the men were on their toes and they got out of the way. The distance from the switch to where they was working was about 25 feet and it didn't give them much time to get out of the way. Well, the assistant foreman was there and he took the number of that motor and nothing was done about, and I think he took the number of different motors, well, are far as I can recollect, maybe 30 or 40 times and nothing was done about it.

Equipment of that sort is dangerous and it should be fixed. If you refuse to operate it, the only thing they do is to hire another man to take your place. So as far as quitting or refusing to operate is not the answer to the problem, the answer to the problem is that brakes

should be put on the motors because they are the necessary part of the equipment and a safety-guard against accidents.

Another thing on that beat—I am talking about a certain portion—by beat I mean a certain portion of the mine. That mine may have a dozen beats to it, but I want to show you that on—well, this isn't the only beat, but practically of them, but this beat that I work on is a specific illustration. In one of the drifts past the tool locker there is a bunch of electrical cables that are dragging, and when the cars come down with the rock the cable is dragged on a car. They are rubber-coated cables and I don't know what voltage they are but they are a pretty high voltage; and it's a poor practice to have cables dragging on cars because they could be tied up. It's a regular route and the bosses go through there day after day, but still in all these cables have been dragging for months and months that way that I know of. They were taking out a fall of ground there at one place and they blasted on the sill and they picked up the muck with a mucking machine, and one of the cables was knocked in the muck and it was hot. They blasted without disconnecting the cable. This cable, well, every time you would touch it it would bite, but I don't think it was very much; but still in all with a mucking machine working around something like that, it could be dangerous, and that cable should have been disconnected before they blasted that round.

Another thing that they haven't got is some place where they pull the chutes they got a bunch of fans running and they make quite a racket, and they obstruct your vision and they should have some kind of a buzzer or whistle close by the motorman so the motorman can hear by the moving of the cars when he is close to them and you got to take a guess on what your partner wants and then you might do the wrong thing and then there is the possibility you might run over some person or the swamper.

That's all I had. I think that this bill is a good bill and I hope that it's passed and that it will be the starting point to remedy conditions which it seems to me are getting worse as time progressed within the last year or so.

I don't know whether its on the speedup on production that made them progress but it seems to me that necessary precautions are not being taken to safeguard the health and the life and to safeguard the men from any accident that might be fatal or that might be near-fatal. That is all.

Mr. METCALF. Does that complete your statement, Mr. Eaglowski?

Mr. EAGLOWSKI. I am finished.

Mr. METCALF. Do you have any questions?

Mr. ELLIOTT. I have no questions.

Mr. METCALF. Mr. Eaglowski, I want to thank you for bringing to us this list of safety conditions as you have observed in the course of your activities in the mine. Thank you for your testimony.

At this time we will recess for about 10 minutes.

(Recess from 3:10 p. m. to 3:20 p. m.)

Mr. METCALF. The committee will be back in order. The next witness will be Mr. Tahija.

Give your full name, Mr. Tahija, to the reporter. Tell the reporter your full name, Joe Tahija.

STATEMENT OF JOE TAHIJA, MINER, ORIGINAL MINE, BUTTE, MONT.

Mr. TAHIJA. My name is Joe Tahija. I live at 1039 Maryland Avenue and I been in Butte for 20 years, and my sole employer was the Anaconda Co. I now work at the Original mine.

I would like to speak in favor of this legislation, and I think the company isn't keeping up their safety rules and they don't want to abide by them. They got their rules, but they don't enforce them.

The last few years my experience is—we will take blasting. They put one man up in a stope slushing by himself and if he has to bulldoze a boulder there is nothing he can do with it but blast it. He can only go one way to guard against it, and he generally goes the opposite way the smoke is blowing hoping the smoke will warn the fellow coming down the manway, but if its a dead-end place you can walk into a blast awful easy with no one there to guard him.

I think legislation of this kind would prevent that of having one man working by himself and allowing the dangerous hazards like this open.

Of course that blasting raises the dust but that has been pretty well covered, and I am not going into that.

Another thing we have here on the dust question is the blow-pipes. When I first started to work in the mine the drifts were the only places issued a blow-pipe and all you were allowed to blow was a wet hole that you drilled before you blasted your lifters down-cuts. Now they use a blow-pipe for anything. They clean down stopes with them, they clean out the cars with them and even go as far as to dig ditches with them. They blow the muck up on the track and then muck it up with a mucking machine later on, but I haven't heard of any boss or any safety engineer or anybody telling the men not to do that where years ago if you were caught doing that as was the miners expression it "was your tail, up you went" with no ifs or ands about it, you were fired. It was a red mark against your safety record.

Now I think if this silicosis was made an occupational disease the company would have to pay the compensation and it seems they would be more careful there with things of this sort and would enforce it.

As I was saying about the men working by themselves up in these stopes, they blast and muck this rock in the chutes and it breaks the sides of the chutes, well, they haven't time to repair them; they are contracting and they are trying to make a few bucks, but the most they do is take a piece of lagging and nail it on the outside of the chute and that's a haphazard job of patching. So if you happen to be in the manway when he is slushing it isn't worth your life to try to climb it as rocks are coming down, and at the same time these rocks come down they break the rungs out of the ladders. It used to be a practice here when a rung was broke off of the ladder that it be replaced. Now all they do is nail a piece of 1-inch board across it but some of the miners take the broken rung out and put a piece of loading stick in it. Now there is quite a difference between a piece of loading stick, the diameter of a rung of a ladder and a loading stick because the ladder rung is about an inch and one-half in diameter and the loading stick is about seven-eighths of an inch, so it isn't very safe

practice to climb up on these little pieces of wood which they actually are.

Now about these rock bolts that were brought up here before. I don't think much of them myself but that's my personal opinion. If a man is driving a drift he has to have safety stringers on it and the stringers have to be blocked and lagged over before he starts them up. Now in a baldheaded drift they use rock bolts. They will go 50 or 60 feet with the drift before they put in a bolt but some men that have better going they will put them in as they go along, but if a man can muck 50 feet of drift up with rock bolts there isn't much sense in putting it in after while because actually more men get hurt while they are mucking the round out than they are after while.

I think that's about all the testimony I have, and thank you.

Mr. METCALF. I have no questions, either, and thank you very much, Mr. Tahija, for your testimony.

Now, as I understand it, the next group of witnesses are going to be called out of the jury box in the order in which they are sitting, so will the first witness come forward.

Will you sit down and tell the reporter your name.

Will you please state your name?

STATEMENT OF LIZA AJDUKOVICH, MINER, DISABLED, BUTTE, MONT.

Mr. AJDUKOVICH. Liza Ajdukovich.

Mr. METCALF. And you are working in the mines now?

Mr. AJDUKOVICH. I worked in the mines since 1917, in and out.

Mr. METCALF. Are you still working there?

Mr. AJDUKOVICH. No; I have been an accident case since the 6th of May 1954, on Thursday, at 11 o'clock, I got hurt by trying to catch up some bad ground.

Mr. METCALF. We can't hear you. Will you speak up?

Mr. AJDUKOVICH. In 1954, 6th of May, on Thursday, I turned my report in to the boss to go to work and then they give me a partner the first shift, a young fellow, and he had no much experience in mining, and he says, "I am your repairman," and the boss said, "Liza, I want you to go over and catch that country up." He told me the number of it, and everything else, and he said, "I will give you a partner this morning, a young fellow," and we went over there, and this Minnie Healey country, they call it treacherous country, very treacherous. It takes a very experienced man to hold that ground. There is no doubt about it, and every man knows that. You don't have to have no air blast in that country, as two sticks of powder will blast her down, allowing the whole mountain to come in.

Nevertheless, I was barring down and had a sound test on it, and had her all caught up nice, you know, and seen that all the back—I can't hear, hardly hear, as my eardrum is broke, and I can't look up, my vertebrae is dislocated; and as we barred down and got her all caught up and gave her a good sound test, and I didn't have room for timber, and I says to my partner around about a quarter to 11 we had to drill 1 hole, what we call plug out. I said, "Pard, you are young and healthy, you go down and get two sticks of powder and a primer, as we got to blast out and make room for that timber." He did that,

and just about that time the assistant foreman and the boss came along, and he says, "You done a good job," and I told him I had too, and he said he had a couple of greenhorns tonight, and we got to put them in here. I just thought to myself.

He went over there and while I was connecting the hose to connect the machine some way or another, I don't know where the hell it come from, and I still don't know right today; it must have come out of the manway—a boulder come down about that big [indicating with his hands] and hit me right on the head. Well, its 1 floor up and that floor would be about 11 feet and I am 5 foot 2½, and that would be about a 16-foot direct fall—you can see where I got it.

In my time I was rough, tough, and could stand it, and that's what probably saved me as I was rough when I was a kid, you know. All at once while I was connecting that hose getting ready to drill that hole. Now its just as true as I am telling you. I know that it didn't come out of the back and I am pretty sure of that because I was pretty careful. I never got hurt before, maybe a few scratches. I never got a broken leg in the mines or the 38 years in and out. Anyway all at once something come along when I was pulling that hose up to get it up where I could drill and it hit me right on the head here and knocked me down head first down the sill, down the drift where the track is. That would be about 16-foot direct fall.

Now they had 40 stitches and they give me a transfusion but I had a little first-aid treatment, I knew how to control myself a little bit and that's one thing I did learn. If I don't know nothing else I know that anyway.

So I controlled myself and got a hold of my driftman who was running the motor and I asked him to take me to the station. I showed him my head and my hat was broke and it was like a mushroom. Those safety helmets are a wonderful thing and they saved a lot of lives. So they took me down to the station and the assistant foreman and the boss was there ready to go to lunch. That was about 11:30, and he said, "What happened to you?" and I said, "Your guess is as good as mine and I guess you can think where it come from as you were up there, you seen it"; but the idea of some of them places in that Minnie Healey country has got some much timber and its a very treacherous country, and some places they don't timber it up and they get a few greenhorn miners that don't know what its all about they go in there and they get cripped up or killed. That's what we old-timer miners call "johnny come lately."

Anyway I went to the hospital and they give me a blood transfusion and they didn't give me nothing to eat for 3 or 4 days, and I couldn't hear then in this ear here. I had Dr. Plutt, of the Casebeer Clinic, investigate and he said the drum was broke.

They took me out of the hospital—I didn't realize that I was that bad; I didn't, for a fact. All at once my feet started swelling up. Well, they thought it was heart trouble and then I got looking up and I fell down but I pretty near killed myself falling down. This dislocation of my vertebrae caused dizziness.

Dr. Sacre, a chiropractor, worked on me and he said there is nothing we can save as you are lucky you saved your life as it's almost connected with the brains.

Well, I have seen a lot of cases like that but it seemed like its just one of things that I got hurt and I been on the compensation now

since the 6th of May 1954. I am getting $98 and I get that under the 1954 law.

Well, I don't know, the way I understand it I am totally disabled and I am not able to work any more. I don't know what they can do with me, to shoot me or what the hell to do to me.

That's all I can tell you.

Mr. METCALF. And that completes your statement about this particular accident.

Mr. AJDUKOVICH. Yes.

Mr. METCALF. Do you have any questions?

Mr. ELLIOTT. I have no questions.

Mr. METCALF. Well that completes your testimony and thank you for coming.

Just peel off from that end and we will take the next witness. Tell the reporter your name and proceed in any way you see fit.

STATEMENT OF ERNIE SJOMEN, MINER, AND PRESIDENT, BUTTE MINERS UNION NO. 1, INTERNATIONAL UNION OF MINE, MILL, AND SMELTER WORKERS, BUTTE, MONT.

Mr. SJOMEN. My name is Ernie Sjomen from Butte.

Mr. METCALF. And your official position?

Mr. SJOMEN. Well, I am the president of the Butte Miners Union No. 1 of the International Union of Mine, Mill, and Smelter Workers.

Mr. METCALF. Go ahead.

Mr. SJOMEN. I have worked in Butte almost continuously since—well, when there was work available since 1929, but I already came here in 1918 in March and worked for about a year; but then I was away from here and worked in the woods and so forth a little in the iron mines and came back here in the summer of 1929; and it's been my intentions to talk about occupational diseases especially in the mining game and especially in Butte and for the very fact that I happen to be familiar with some of them and more especially with silicosis, because I am a victim of silicosis myself.

I will mention with a few words that first it was always my object to make trips to doctors and have them inform me when it was time to get away from the Butte mines. Well, I kept on going 2 or 3 times a year to have an X-ray taken and finally just like out of a clear sky they tell me in 1947 that you have the third stage of silicosis. Well, things were too late then—of course I condemned them for such a move as I thought they should have been more honest and let a man know that he could have maybe saved a part of his life.

Then I would also like to make the statement that I follow the line that I always thought that it was not so much subject for a fellow to get silicosis and that is that I worked in sinking shafts where there was some to be sunk, and I think that was one of the reasons that there happened to be times when there was no shafts to be sunk and I would have to start going through the shafts and most naturally they are very dry, and one of the reasons that they are dry is this more and more rock and they overload the skips and the rock comes rolling back and down the shaft and it most naturally raises a cloud of dust. They have no means of wetting them down.

I have seen a few occasions in Butte where they have taken steps to keep them wet down. A few years ago I remember a foreman telling me that when you hear something, he said, throw the fire hose down the shaft and give it full force. Well, most naturally of course that shaft was considerably better for many days afterwards because that was an awful stream of water going down that shaft.

Then further on with the experience of silicosis, after 1947 I thought its no use quitting the mines and I kept working in the mines and in the shafts considerable, very seldom inside and sinking winzes, and so forth. Then in 1950 I thought, well—in 1948 I took almost a year off because some doctor told me it would help you a lot if you stay away a year from the mines. I stayed in Butte but I didn't work in the mines and in fact I didn't work too much in any place because I wasn't feeling too good.

Then in 1950 I made a trip to Rochester, thinking from what I had heard that's a wonderful place, and they cure almost anything there, and one of the doctors that first checked me a little, he said, "I don't see why you come here because you have greater authority right in the Montana State Sanitarium at Galen, and what is the use of coming here; but if you want to spend some money, that's all right." Well, I did spend a little, but not much, after he told me the truth about it. He then told me that if you would have 3 or 4 months' time we could maybe help you a little, but there is no use spending very much because you are already—I was 50 years old at the time—50 years old—and he figured it was no use to spend any money.

Well, here recently—it was in 1954—I started feeling that I can't cut it any more, and I was waiting for a vacation, and when the vacation came in 1955 I didn't go in the mines any more. I happened at that time to be vice president, and therefore I got—well, like the old saying is, that if someone dies you get their place—he was president and he didn't exactly die, but I got his place, anyway, and since that time I have been president of the Butte Miners Union No. 1; but being on a job like that, where it doesn't require too much physical exertion, I have noticed that sometimes even that is too much, so last winter I happened to get a hemorrhage about 9 o'clock in the evening, and I started throwing blood, about a tablespoon about every hour or so, and in the morning I thought it's no use telling anybody in the nighttime, as they were asleep, and I went to see a doctor in the morning and he told me that you exerted yourself some way and when you got silicosis you exerted yourself some way and that maybe will cost you your life, as you should have called somebody in the nighttime.

Well, then I stayed approximately 3 weeks in the local hospital here, and then on top of it all—although there is medical authorities, but I don't know if there is any here that I have heard—but there is medical authorities that have stated that silicosis and TB have nothing to do with each other, and it was in June when the local county TB doctor wanted to isolate me, and I didn't have time to be isolated. In fact, I isolated myself from home and got a room next door, and then I thought I would find out what stage the TB is in. After that I had five mornings to Galen and when I was examined there they told me that the county doctor had made a slight mistake; they said that your silicosis is of the typical type; you may live 10 or 15 years, but one good week of work at hard labor it will kill you; and, in fact, when I

went there later he showed us all kinds of X-rays, and I said to get mine and let me know more about it, and he went and got it and he said its the typical kind, and that's where the man made a considerable mistake on the left lobe of the lung. He said it's typical for the very fact that you may live for 10 or 15 years, but one good week of hard labor will kill you. In fact, he even let me know that I would commit suicide the easy way and beat the insurance companies.

Since I got the disease myself and am president of the miners union I have noticed that the claim department in Butte often—I got so that I can read backwards even—I noticed the hospital report "extreme case of silicosis and TB" on injured men; and here there is a report like that along with his accident report and I have a lot of times seen that there is more leniency in the compensation part of it. Further on my studies I have noticed that there is one side of the "hill" here in Butte that seems to have a different kind of a dust that I can name, if there is no objections, men after they left the job they couldn't hold no kind of a job or move about as I do.

There is 2 or 3 out of the 8 cases that I got on my list here—there is 2 or 3 of them men and 1 who was waiting for his vacation the same as I was and he went to Galen and lasted 3 days; there was another man that left the job and went to Galen and he lasted 1½ days, and then there is the man that stayed home and he—and Dr. Terrill told me when I questioned him in Galen said those fellows would have lived 3 weeks, too, if they stayed home. The transportation from Butte was too much for these men as they had such extreme cases of silicosis.

Another man that is pretty well known to almost everyone in this room, he was a shift boss. He lasted 3 weeks, and just because he was a nice sort of a man to work for I went to see him a few time, and he only lasted 3 weeks. He told me when I asked him why he didn't go to Galen and he said it would be the last of him.

Now, getting to the legislation part of it and the safety in eliminating these hazards. There is other occupational diseases in Butte that are not covered by any compensation law of any kind. There is the occupational dermatitis from certain conditions in the mine. Some slime goes in the man's boots, and so forth, he gets an occupational rash in which the medical science determines as occupational dermatitis.

Then there are 2 or 3 different kinds of rheumatism that are considered and medical science considers occupational rheumatism. It isn't only silicosis that would need more and better legislation but also these other occupational diseases. It's no easy matter—I can consider myself one of the lucky ones that I can run across a job, but the next step would maybe be starvation. There is some kind of a compensation for silicosis in the State of Montana, $65; but what can a person do with $65? With the present price of things he can't buy cigarettes. These are the things that would need a lot of improvement.

Now, when I first came to the Butte mines—I don't know if its the new machinery that is coming to the mines or not—but them days even before I took the shafts as a steady working place there seemed to be a habit when we were shoveling this rock in the drifts by hand that we wet that pile extremely through before we would use that water hose for any other purpose. In other places also there seems

to be more tendency by the miners to wet down and also from the company side of it. I can remember in 1942 the men were mucking in the mine with water hoses and connections all along the drifts and wetting down the drifts, and I noticed that for a while they used them when they had mucking machines even they would wet that muck pile in the drifts.

Now with more improved machinery and production per man gone up we think, by God, I don't know, what's the trouble; but there seems to be no time for wetting down these places and they are extremely dusty and the shafts especially, and I think the shafts where the hoisting is done they could also be wet down so that there are so many particles of dust through the meter so that the man would be safe and he wouldn't be subject to silicosis which means just as much to say that you are condemned to a slow death.

That's all I got to say.

Mr. METCALF. No questions, Mr. Sjomen. We thank you for coming here to testify.

We have a delegation from Great Falls, and we will have the next witness, Mr. William H. Graham.

You may state your name.

STATEMENT OF WILLIAM H. GRAHAM, EMPLOYED AT GREAT FALLS, MONT., PLANTS OF THE ANACONDA COPPER CO.

Mr. GRAHAM. I am William H. Graham and I am from Great Falls and work at the Great Falls plants since 1928.

Mr. ELLIOTT. What are the Great Falls plants, Mr. Graham?

Mr. GRAHAM. They belong to the Anaconda Copper Co. It is zinc, copper, and wire milling. We have three plants there, the smelter and the mill.

Mr. METCALF. The smelter and the what?

Mr. GRAHAM. The smelter and wire mill. I have been on practically every grievance committe that they had in that department and some around the plants.

At this time I would like to compliment Mr. Salvas for the way he compiled and presented the case of Butte miners, Anaconda and Great Falls to this committee. I don't know just how he was able to compile the figures but I think he done a wonderful job. The committee also done a wonderful job in the questions they asked him after he was through with his remarks. I refer back to one that Mr. Elliott asked him and Mr. Salvas stated that there was so many silicosis cases receiving compensation at this time. I think Mr. Elliott asked him could he tell him how many more there would be suffering this—we will say a third or two-thirds of silicosis, percentage of silicosis—and Mr. Salvas answered you that he could not.

At this time I would like to cite to you a case that I know of, of Mr. Louie Salvina. He was employed as a young fellow at the smelter at the age of about 17. He worked there for 32 years. He got sick and went down to what was known at the time and is known yet, the smelter doctor. Incidentally, its an agreement with the union and the management for Great Falls where we have the doctor and hospital setup which is agreed upon in negotiations. Personally I like it myself and I think most of the members there do, too, but Dr. Lord stated that Mr. Salvina had TB. So, of course, he got a little worse

and worse and he wasn't able to go to work. He was very fortunate that he had raised a pretty decent family and they were able to take care of him.

He was at the age of the previous witness here, around about 50. He was granted a gift as we would like to believe it was—as we had no agreement with the management at that particular time—on a pension plan which amounted to $50 per month. He struggled along on that with the help of his family for several years. Then he died and the same doctor that put TB on his case when his son went over there to get a death certificate Dr. Lord stated on there "silicosis." That gives you some idea how Mr. Salvas was not able to give you the perfect figures on silicosis at that time, or how many workers had silicosis.

Now, as you know, we get the concentrates from practically every smelter there is out there.

Mr. ELLIOTT. You get the concentrates from what?

Mr. GRAHAM. From mines all over the country and I don't know exactly which ones. That is for zinc you said. This is placed in the roasters.

We have a number of individuals on these jobs and one in particular I know of who is receiving State allowance as far as the silicosis case is concerned, so we have quite a problem there as far as the dust is concerned.

The next one I would like to talk about is arsine gas.

Mr. METCALF. Arsine gas?

Mr. GRAHAM. Yes. Mr. Salvas in his reports mentioned the fact that quite a few years ago—not so many—that 4 men—or that 8 men were gassed and 4 of them died, and I think that Mr. Metcalf asked him a question that providing we had legislation of this type could that accident be avoided. I think you can recall that. Mr. Salvas again said he couldn't tell.

Now I was on this investigating committee around this plant and I checked the plant every day after the accident to find out if there was any change that the management might immediately put in before the men was brought down there from the compensation board to investigate this matter. Well, if I had have been in Mr. Salvas' place, which I think I knew more about it than him at that particular time, I would have to answer you and say that I am quite sure if we had that legislation which we have under discussion in the last few days that a case like that would definitely have been avoided on the basis that these three leeches where this concentrate went in it overflowed and went into the following three leeches which absolutely had no ventilation whatsoever.

Ventilation was immediately installed within a few days and forced air was placed in there and I might add that the management went to great expense to make sure this would not happen again if they could help it. As I stated there I might refer back to—I was called upon at the Federal jury at Havre one time and one young fellow by the name of Jeff, he was around about I would say 38, he was on the jury at the same time with me. We came back from the jury and he went to work and incidentally he worked in this particular department. Within about 3 days he was dead. We can't tell what happened because this arsine gas is so deadly.

Recently last fall I happened to be bowling at the smelter clubhouse, and I met a young fellow there that I had worked with after the strike. I was transferred over there for a short period of time, because my job wouldn't be working until a later day. After bowling with this young fellow—he would be about, I would consider him, about 41—about a week after I looked in the paper, and here he is dead. He worked in the same department.

Now I am just a layman on this, and I don't know whether arsine gas did it or whether it was just a natural death, and which it could have been. There is no question about it.

I also read in the paper a week ago where Rex Blackby, who spent quite a considerable number of years in this department, and he quit due to his health, and took another job, and I seen he was dead. Of course, we are all going to die, but the question now is, Does this arsine gas still enter into the picture? And I have to admit that I think the company went to extremes to try and stop it.

The next one is temperatures. There is a young fellow here from Melrose, a miner, who was discussing temperatures down the mine. Mr. Fjare asked him a question on the temperatures. I consider in this day and age that it's very much easier to have, we will say, a cooling system in this room, than it would be for you to have a nice cooling system down the mine; but over in the copper department at the present time we are having quite a lot of trouble with lost time. We have men there that has worked in there for several years and some more than that, and this last year I think the average has been—we have about somewhere around 80 men working in this particular department, and I think the average runs about around 5 men per day who do not show up for work. I tried—which is not my business—to figure out why these men miss so much work. The day before yesterday, incidentally, there was nine didn't turn out. So I tried to look for the trouble, and I find—if you have been through that proper department you will find it covers 3 acres of ground, and you will find certain divisions—I am using that word "division," because they pull copper out of—we have 24 divisions and they pull copper out of 1 each day which gives you a different location practically every day for to pull copper. In certain places it is absolutely no ventilation, and I have tried to take the temperatures, and the temperatures were in some days, I would say, given a good average, they would run 110 steam heat. These men go in there, and the conditions are extremely favorable. Now, again you might ask me, What are we doing about it? Now I have to admit that I think the Great Falls management puts on one of the most elaborate safety first programs that I think any company does. I been on their first-aid teams, and I also was a judge, I was a judge there last year. I have spent a lot of time on safety first.

We have our safety-first meetings once every month. About 4 days ago I was present at our last meeting. The men are asked suggestions as to what could be done to avoid accidents.

They never asked the question, What is the reason why these men are missing so much time?

Now I would say, for the last 5 years, and I think you can check the records, because the records are kept of every safety-first meeting, that the men have requested some air condition in this department. The management a couple of years ago went to great expense in installing a 2-foot pipe across the ceiling and some of these outlets down into the

basement and connected on to fans. I might say that when I went to work there in 1928 this was exactly the same installation that was in there in 1928 with absolutely no change whatsoever. They went to the expense of replacing, and you have air conditioning.

It reminds me of this TV show where I see where the Montana Power advocated for safety first these octopus plugs that they use. As I stated, we have this 2-foot pipe, and we have 12 extensions from it across 3 acres of ground from each fan, and we have 2 fans. I have tried to put a match in front of it, and it won't blow the match out. I brought the management's attention to it, and they said, Well, we got to do something about it.

Now the men themselves got together this last summer to see what they could do about it. Well, as you know, the men cannot afford to install air conditioning so they have to figure out what method they can do to make working conditions better for themselves due to the fact that the management did not take any action. So they agreed—our regular starting time is 7:30 o'clock in the morning and so they agreed to start at 5 o'clock in the morning so as they would work under 2½ hours of cooler weather which might help them out to extend the shift.

Now we have a few cases of where we had to carry individuals out of there due to the high temperatures.

Now I want to thank you for having the opportunity of explaining our case. I sure appreciate the way that Mr. Salvas presented our case from Great Falls and the way that you fellows brought out them vital questions which I believe that even though the bill is not what we want it might tend to help us out in the future that we can avoid some of these accidents, so I thank you.

Mr. METCALF. Mr. Elliott has no questions and I have no questions either except that on behalf of the subcommittee I want to thank you for coming down from Great Falls to give us the benefit of your experience on these safety committees and on these grievance investigating committees and hearing the stories of conditions in the smelter there, so I thank you very much.

I guess we still have Great Falls representatives.

Mr. ELLIOTT. I would like to say, Mr. Chairman, for the record the reason I am not asking questions of these witnesses is in order to save time as much as possible because we must finish here today in order to meet our next engagement.

Mr. METCALF. I think they undertand that we are trying to give everyone an opportunity to be heard. Mr. Wenner.

You may proceed and state your name.

STATEMENT OF LLOYD WENNER, VICE PRESIDENT, GREAT FALLS MILL AND SMELTERMEN'S UNION NO. 16, GREAT FALLS, MONT.

Mr. WENNER. My name is Lloyd Wenner and I am from the Great Falls Mill and Smeltermen's Union No. 16 and at the present time I am vice president of the union.

There has been a lot of discussion here about safety and about their safety committees, and so forth, and our safety committees as such we don't have safety committees, but we do have safety meetings where all shop stewards attend meetings. Some departments where the same

crew is on is probably once a month. Other departments where they have changed shifts I think they meet twice a month, and as far as these meetings are concerned there are unsafe practices brought up at these meetings and on the whole they are pretty well taken care of.

There are some good suggestions and there is some suggestions that the company doesn't warrant and don't figure its good enough to change, but on the whole we do fairly well. When anything is unsafe we bring it up to management and we generally get results, but that is not our big problem.

Our big problem is health. Health and accidents are two different things and our problem in Great Falls is the health problem, and by that I mean—I have gone to these safety meetings and other fellows in my department have gone to these safety-first meetings and they have brought up the question of smoke in the zinc casting for instance time and time again. It gets terrible smoky in that zinc casting. It sometimes gets so smoky where the men get sick and they can't eat their lunch or if they do eat their lunch they lose it. That is on some days when its really drastic. We have brought this condition up at the safety-first meetings and we have tried to get the company to extend the stacks over the furnaces where the excess smoke that leaks out through the charge doors goes out through the stacks and out into the air, but the zinc casting is situated in such a way that there is buildings almost surrounding it and these other buildings are higher than the zinc casting and there is a downdraft. That is the reason why the workingmen think that to raise the stack probably about 30 feet would help tremendously in getting the smoke away from the buildings so that we would have better air to breathe. They didn't figure it would cost too much to do this, and I was on the committee that brought it up with management and managements said if they thought that they would help and although they would have to start from the ground because the roof wouldn't hold any more weight to put these stacks up, and if they had to start from the ground they would go ahead and spend this money if they thought that this would do any good. The company thought that this would not do any good and it wouldn't alleviate the question enough to warrant going to this expense. I think that you can talk to anybody working around the zinc plant whether it be the casting or leech or the tank house or carpenter shop or any of those places around there they all holler about raising those stacks, they all want those stacks raised; and it seems to me like it should be looked into as all the fellows thinks that would bring the smoke out further before it comes down and back into the building, so I think that something could be done to better it.

We took this up with management and management blames it on to the direction of the wind. The wind has been so much from the east here lately that the fellows in the tankhouse if they bitch about the smoke why they blame it on to the east wind because the tankhouse is sitting to the west of the casting. The wind is generally from the southwest and then us fellows that work around the casting dock and the guys at the carpenter shop they are the ones that suffer.

It seems to me that something should be done about this smoke.

Brother Graham there told you something about the conditions in the zinc leech and some of the conditions in the copper refiners, and on the whole our main problem there in Great Falls is ventilation.

I think you can go through the zinc roasters, the zinc tankhouse and the zinc casting, the ECR tankhouse and most every building, and our main problem is ventilation.

I am here today to stress the point on ventilation. As far as as accidents are concerned, accidents that we would have that a fellow worker would draw accident compensation for are slight. In Great Falls I think we have a fairly good record but there is a lot of things that we might call accidents like maybe getting too much of this smoke and you are sick and can't work the next day. Well this is as bad as a lost-time accident like where you have a bad cut or something like that where you can't work.

Mr. ELLIOTT. Those are not classified as accidents?

Mr. WENNER. No, sir; they are not. I think, Mr. Chairman, that's about all I have to say.

Mr. ELLIOTT. Let me ask you just one question. How many people work in this room where you get this zinc smoke?

Mr. WENNER. There is roughly about a hundred guys working there. It's a continuous operation on three shifts.

Mr. ELLIOTT. About 33 to a shift?

Mr. WENNER. I would guess something like that.

Mr. ELLIOTT. One hundred all told on three shifts?

Mr. WENNER. Yes.

Mr. ELLIOTT. Well, how often does somebody miss some time from work by virtue of sickness inducted by breathing this smoke or whatever it is?

Mr. WENNER. Well, I can't say how often they miss, but I know that guys have missed shifts, and the only thing would be on their reason for missing a shift was because they was sick, period.

Mr. ELLIOTT. Does that happen once a week on your shift?

Mr. WENNER. I couldn't say it would happen that often, but it does happen and the condition where we have to work with—there is another thing I almost forgot to say now is that this thing has been taken up in safety-first meetings and there has been nothing done about it because they say its not a safety measure. So last year we took it up in our negotiations—its too bad Mr. Fjare isn't here now—but we did take it up as a local demand. Our local demand stated that something must be done about the smoke conditions in and around the zinc casting, and when we signed the contract we figured that we had that in the bag. Something was supposed to be done about the smoke in and around the zinc casting, but as yet nothing has been done and the contract was signed last July.

Mr. ELLIOTT. That is all.

Mr. METCALF. You said that people became ill on the job sometimes during their lunch hour and were unable to eat their lunch, and if a man was able to eat it, he lost it?

Mr. WENNER. Yes.

Mr. METCALF. How often does that happen?

Mr. WENNER. Well, I can't say it happens too often.

Mr. METCALF. Does it happen frequently?

Mr. WENNER. I can't even say it happens frequently, but I know when you get a certain amount of this smoke and some days it's more than other days and when you get too much of it you get sick and can't eat.

Mr. METCALF. I think that's all, Mr. Wenner. We are very glad to have you here and are pleased that you came down here to testify as you have been very helpful.

We are still coming down the front row of this jury box and the next witness is Joe Geier.

Mr. Joe Geier. You may proceed. You may state your name.

STATEMENT OF JOE GEIER, EMPLOYED BY MONTANA PHOSPHATES PRODUCTS CO., GARRISON, MONT., AND REPRESENTING DEER LODGE MINERS LOCAL NO. 834, INTERNATIONAL UNION OF MINE, MILL, AND SMELTER WORKERS

Mr. GEIER. My name is Joe Geier, and I am employed by the Montana Phosphates Products Co., of Garrison, and I am here to represent——

Mr. METCALF. That's the company at Garrison?

Mr. GEIER. Yes; the Montana Phosphate Products.

Mr. METCALF. We heard testimony from Mr. Fred Burnett. He is the manager and president of that company?

Mr. GEIER. Yes. I represent Deer Lodge Miners Local No. 834 of the International Union of Mine, Mill and Smelter Workers.

I have worked for this company off and on since 1943. The last time I had been with them 5 years the 30th of October.

When I first was employed at these mines all their stopes they drilled dry, no water in the stopes. The only place they used any water was on drift work and waste, but since about 1946 they have been drilling in the stopes and using water.

One of the biggest troubles on the phosphate mines has been the ventilation. At the Graveley mine which closed down a couple of months ago, in one place in particular I was working in a drift. We were about 2,000 feet from the last stopes doing development. We had a fan set up about three stopes back from the last one that was worked out. I had a fan in the drift that was sucking air, and it was sucking air out of the stopes that had been silled on this certain level. Well, the air that was coming out of these stopes below was just picking up the gases from the lower levels and sending it back into the drift. I asked the foreman why he couldn't move that fan back about five or six hundred feet where there was some better air. He says, "We haven't got enough in-pipe." Well, they put in a booster fan about halfway back in the drift and that did help some but still that air was pretty foul. There was lots of times we come out of that drift to eat lunch and we couldn't do it, that's all, and headaches pretty near every day; but the other mines, what I gather from the members that work at the Anderson, their air problem isn't too bad.

Mr. METCALF. Is that a phosphate mine, too?

Mr. GEIER. Yes, sir. I am now employed at the Rock Creek tunnel where they are driving a big tunnel. We have a suction fan in there. It's setting outside sucking the air out. The air is fine up to the end of the vent pipe but from the vent pipe in to the face it's not too good. As long as the vent pipe is kept within 40 feet of the face why the air is pretty good.

At certain times of the year at the Graveley mine when the weather conditions were just right that air wouldn't move at all in certain

parts of that mine. You could have a fan on but you couldn't get no fresh air as you were just circulating the gas.

At Rock Creek tunnel they treat their timber. I don't know what they are treated with but when you are working with this timber it makes you sneeze and your nose gets sore. I don't know what's in it to do it but after it's in there a while and dries out, there is little white beads on it which I believe could be some arsenic in it.

They put mudsills in this big tunnel and set the timber on these mudsills and one side of the drift next to the track they dig a water ditch. This water ditch is dug underneath the mudsill. There is approximately 1 foot of the end of the mudsill that is supported on the ground. This ground is quite heavy, and it looks to me like that in time that will collapse the end of that mudsill and drop that timber, and it don't look like it's very safe to me.

As far as accidents they are not too bad. We have only had two real serious ones where the men died, and there seems to be quite a bit of rheumatism, and I don't know whether it's from the dampness but there are quite a few fellows that got some kind of rheumatism.

I guess that's all I have to bring up, and I want to thank the chairman and the committee for allowing me this time.

Mr. METCALF. Thank you, Joe, for coming up here from Deer Lodge to explain some of the problems in the mines in that area to help the committee in their consideration of the big problem that's a national one. Thank you very much.

Now we will take a brief recess again and then we will finish with the witnesses that are remaining. We will reconvene in 10 minutes.

(Recess from 4:40 to 4:50 p. m.)

Mr. METCALF. The committee will resume, and the next witness is Mr. Seaton.

You may state your name.

STATEMENT OF PERRY SEATON, LEACH OPERATOR, GREAT FALLS SMELTER, AND PRESIDENT, LOCAL NO. 16, MINE, MILL, AND SMELTER WORKERS OF INTERNATIONAL UNION OF MINE, MILL, AND SMELTER WORKERS, GREAT FALLS, MONT.

Mr. SEATON. My name is Perry Seaton. I work at the smelter in Great Falls as a leach operator and operator.

I am president of Local 16, Mine, Mill, and Smelter Workers of the International Union of Mine, Mill, and Smelter Workers.

Well, our greatest trouble in Great Falls, as it is in Butte and Anaconda, is ventilation, and as this committee has spent considerable time on ventilation and there has been a great deal of evidence received on ventilation, I don't have much to say except what would be repetitious of what had already been stated on this.

On behalf of local 16 I want to say that we heartily endorse this bill.

On behalf of local 16 and members and officers, I want to thank the committee in giving the committee from Great Falls the opportunity to present our evidence here at this hearing. I think that's about all I have to say.

Mr. ELLIOTT. Most of your members at Great Falls work for who?

Mr. SEATON. We are employed in what they call the reduction department of the Anaconda Co. in Great Falls. It's a smelter and also a wire and cable company, a copper wire and cable company, and an aluminum wire and cable company.

Mr. ELLIOTT. Do the members of your local do aluminum work?

Mr. SEATON. Not in the processing of the aluminum excepting making wire and rod.

Mr. ELLIOTT. You do no aluminum mining up there?

Mr. SEATON. No, sir; we don't. No mining at all.

Mr. ELLIOTT. That is all.

Mr. METCALF. Thank you, Mr. Seaton, and thank you for your patience. I know that you and your delegation have waited around for a long time to present your testimony and the committee appreciates the fact that you came down here and helped us in this hearing.

Mr. SEATON. Thank you, Mr. Chairman.

Mr. METCALF. Now we are going to Anaconda. Is that right, Mr. Fahey?

Will you state your name and give your official position?

STATEMENT OF ED FAHEY, WALKING DELEGATE AND BUSINESS AGENT, ANACONDA MILL AND SMELTERMEN, LOCAL 117, INTERNATIONAL UNION OF MINE, MILL, AND SMELTERMEN

Mr. FAHEY. My name is Ed Fahey. I am the walking delegate and business agent for the Anaconda Mill and Smeltermen, Local 117, the International Union of Mine, Mill, and Smeltermen.

Mr. Chairman and other members of the committee, I take it that this committee is out for one purpose and that is the good and betterment for all the workers in mining and smelting and reduction work, irregardless of color, race, or creed, or organization.

I want to start off by saying that it's very important that there is a central governing body in the safety. Without it we get nothing, not a thing.

Such as we have, I have a case here that I will give you. Now it's important that there is a central body that things are processed through. My recommendations, if I may give one.

Mr. METCALF. We hope that you will.

Mr. FAHEY. That your committee work in with 3 of management, 3 of labor, and that all of these accidents be processed during the course of certain periods and find out where the real blame lies.

I believe it would be a very good idea if this once-a-year inspection—I might state that if the housewife knows she is going to have company at 4 o'clock in the afternoon the house is going to be spic and span, but, boy, if you drop down at 11 o'clock in the morning the house is all unkept and one thing and another you will get the devil, won't you.

Here is a man working tearing out floors in roaster furnace and phosphate. March 5, 1956. Taken to the hospital with arsenic burns, seriously, which the doctors and management calls dermatitis. That's by company doctors defined—by staff doctors I should say; but the man was bedridden in the hospital for 6 weeks from March 26—or 6 weeks in the hospital from March 1956; taken from the hospital

in an ambulance to his home. I suppose they were somewhat crowded in the hospital. He never was able to return to work until June 2, 1956. Now this is arsenic, not phosphate. Not able to work. Now that case through a central body through industrial accident it could be taken up I know, but the point I want to bring out is a central body on this safety issue.

I don't subscribe very much to this plan advanced here this morning that every plan is independent and individual. Safety is safety be it either a Chicago dance hall or a Butte mine. I can't see any place where there is any variation in safety.

Management very well likes to handle things through the process of these safety meetings. They are—I am going to term them the dictator there. You have to beseech them to try to accomplish something. In many cases it's performed and in many cases it's not.

We have had cases which was through disagreement and argument and one thing and another, men killed. I am very disappointed that your committee didn't have time to spend to go through the dust and smoke of the Anaconda smelter.

We have in Anaconda at the present time 4 cases of lung cancer in the last 6 months in the smelter in Anaconda, which I think can be attributed to the fine particles of dust.

Now this arsenic case I mentioned is nonoccupational, it's not an industrial. That man lost all that time from March 26 to June 2 laying in the hospital helpless and no income. Its nonoccupational.

Mr. ELLIOTT. It's not covered by workmen's compensation?

Mr. FAHEY. No, sir, covered by not a thing in the world. Management says its dermatitis. Anything can be dermatitis including the burn of a match could be called dermatitis.

We have 4 cases of lung cancer in the last 6 months from the smelter in Anaconda. We have presently 9 cases drawing silicotic pension on the welfare in Anaconda from the smelter. Why is there only 9? It's a very simple reason. A man can be in the first and second stage but he is supposed to be a helpless individual before he can get anything out of silicosis or the silicotic law which is now $70 I believe, but he has to be in the third stage, he has to be a helpless individual. They don't believe for any condition to take that man for the first and second stage and give him a chance possibly to build up a little. He has to stick on his work and has to stay there until he is in the stage where he is a helpless individual.

This lung cancer is getting to be a serious thing around here in the smelter and the mines.

There is some hold that cigarettes—but I notice that all the doctors smoke cigarettes.

Now on these safety meetings they are very good, they are very good if they are conducted properly and when the proper things are brought and processed through them and attended to. It depends a great deal on the cost. There was squawks and squawks on some structure in Anaconda that a man was killed on. I was called up there in the morning early where this tank had caved down which would naturally weaken all other tanks until these men were forced to go in there and still pick wood in under there and the other tanks were naturally weakened too.

I could sit here and recite all night. I was called up there at 2 o'clock in the morning on a furnace proposition which should have been torn

out during the day and left about a 2½-foot platform around there to bar down these manholes, dropholes as they call them in the furnace, and the only place in God Almighty's green earth that the man had a chance to go from the hot shot of palestine was drop down there 60 feet. So I informed the foreman that he couldn't work in there and he didn't believe me and I had to get the safety engineer and he called him out of bed and he come out and told them to rope that off and not let the men be working there. Those men had been working there and there would have probably been somebody injured if they had not called up about it.

Safety is fine, you bet, and this committee can be fine and function fine if it functions properly. It's not merely a yearly visit to mines and smelters around and as I said the housewife if she is going to have visitors at 4 o'clock the house is going to be in shipshape, but if you went there at 11 o'clock in the morning you might find it different.

So if it will function properly it can do a wonderful good for this country, and it must be a central body through which must come—there must be some rules and regulation and if they are broken before this committee, your committee, Lee, three labor and three management to thresh it out and place the blame where it properly should be placed. Then I am guaranteeing you that there will be much more done in safety throughout all mining, but this yearly visit of a certain day you might as well stick that up in the sack some place because everything is going to be in wonderful shape on that particular day.

I was in hopes that you people would have found time to come to the smelter in Anaconda to see a smoke condition over there and the dust condition. Six hundred yards I would safely say of dust shooting up and men have to go into and not a vent in the whole thing and not a window in the thing. You have to get in there and sweep down that silicotic dust I am talking about, so we are for this committee; and what we are stronger for is the proper working of it after it gets in operation.

You will remember what I told you about the housewife and her house. That's all. Are there any questions.

Mr. METCALF. Thank you, Mr. Fahey, and I too regret that we didn't have time to get down to Anaconda and look over the smelter, look over the conditions there as we did in some of the mines here. The legislation that is before us doesn't mention smelters or smelter inspection, but we are studying also prospective legislation all of which will be introduced in the next session of Congress and we are glad to have this information about smelters and smelter operation that you and your brothers in the union from Great Falls and the men from the Montana Mining Association who testified about the East Helena smelter presented to us today.

Mr. FAHEY. May I put a rider to this?

Mr. METCALF. Yes, sir.

Mr. FAHEY. I am going to recite a little case about safety. We had a man in the smelter who was injured at the smelter with a head injury. The doctors claimed that it was a paralytic stroke. The man is down at the State hospital at Deer Lodge and will be there the rest of his natural life. What I am bringing out about a central body where something issues from like on the safety. Through the indus-

trial accident board we had to fight that case through and he was awarded and given—I won't say just, but he was given a little wherewithal to pay for his home and so on and so forth.

Now that comes under the head of safety also along with compensation.

We had another man up there in 1949 who fell off of a boxcar and would have been cut in half except a wideawake switchman on the B. A. & P. saw him. We took him down to the hospital in an ambulance. Well, the company wasn't to blame here altogether but they were some. It come down to where they ruled that cancer. Through this central board of—the Industrial Accident Board—the man got, I won't say just, but he got a settlement. So that's why it's very important on this safety issue that there is a central body to watch these, and remember that woman in the house deal.

Mr. METCALF. Thank you, Mr. Fahey.

Now, as I understand it you are the next witness, Mr. Lee.

You may state your name.

STATEMENT OF RAY LEE, SILVER BOW, MONT., MINER, AND STATE REPRESENTATIVE OF SILVER BOW COUNTY, MONT.

Mr. LEE. My name is Ray Lee and my official position at this present time is State representative of Silver Bow County.

I was born in the mining town of Joplin, Mo., known as the capital of the tristate mining district. I came to the mines at an early age, the lead and zinc mines of the tristate district and in 1925 I came to Butte to work in the mines here and I have worked off and on from time to time in both the mines here and the Coeur d'Alene district.

Since 1937 I have worked continuously in the mines of Butte until I was afflicted with arthritis in the year 1949. Since then I have not been able to perform the duties of a miner but I have been very interested in the welfare of men working in and around mines and smelters to the extent that I offered a bill in the last session of the legislature on silicosis and I feel that, and have felt for many years, that there should be some ways and means of checking the enormous amount of silicotic victims in this country.

I went to school at a small town where silica dust blew across the school grounds almost constantly, and I believe it was the year of 1937 that the International Union of Mine, Mill and Smelter Workers persuaded the Department of Labor to make an investigation into that situation, which was done; and if my memory serves me correctly they found 32 percent of the schoolchildren in that small town had traces of silicosis.

Now these conditions I see arising in the city of Butte today. Most any time a person wishes to go to the east side of this "hill" from 7 o'clock in the morning until midnight at night they can find dust from drills, trucks, large shovels, floating across the hills, the highways to the homes and so on from the open-pit mining on the east side of the "hill."

Now I realize that this committee's prime interest is to find out how to prevent these things but I also feel that there must be some way or other of furnishing adequate compensation for workers who are unfortunate enough to become victims of silicosis or other occupational disease.

In this State, as you have been told many times before, we have what is known as the silicosis law. It is administered by the welfare department which places the victim of silicosis after all these years of work to be placed under public welfare. Something that's paid by the taxpayers all over the State of Montana; but some people say that, have said, that this is a problem of negotiation, and to some extent I agree that there should be some way where the workers through their representatives should be able to sit down across the table from management and work out some ways and means of taking care of these people without placing the burden on the entire State of Montana; but there again I introduced another bill in the last session of the legislature known as the 8-hour collar-to-collar law. That bill was designed to keep the workers from having to stay underground any longer than was actually necessary.

Today we find, and I think the records show, that in 1939 the Wage and Hour Department held a hearing in Salt Lake City and it was proved beyond a reasonable doubt that workers in the Butte mines were working or staying underground all the way from 8 to 9¾ hours.

Being a member of the Labor Committee which handled House bill No. 6, the 8-hour collar-to-collar bill, we held a hearing and it was management's contention that this also was a problem of negotiations, but in the last negotiations where this problem was brought before management as one of the local's demands the company refused point-blankly to discuss it at all, claiming that it went through the courts and it was not a matter of negotiations.

All these things convince me that there has got to be legislation passed in this country, whether it be Federal Government or State government that will compel management to have some respect for humanity. I say this because from my opinion arthritis itself, speaking of my own condition, is just as much an accident in the mines as it would be for a rock to fall on a man. Its something that's developed through his occupation from one contrast to another, going from an extreme heat into extreme cold.

Many times I have come out of the mine here where my clothes were wet with sweat from heat underground and before I could get to the dry room they would freeze on my body. That is not good for anyone, I will assure you.

Now, I feel that the legislation that is being discussed here and considered by the committee is very good, but like others I feel that it doesn't go far enough; that no doubt there will be some legislation later that will deal with compensation for industrial diseases.

I think it was in 1938 that a bill was introduced in Congress by Montana Senator Murray on silicosis which carried compensation for the same. Maybe if we go ahead, which we all do, and support the legislation that you are considering here today and wait for a future date for compensation I think we would be taking the highest step that we possibly could take for the protection of workers in the metal mines.

I believe that's all I have to say, it being a late hour here.

Mr. METCALF. Thank you, Mr. Lee, for appearing here.

Mr. ELLIOTT. Let me ask the gentleman this: Is it the gentleman's contention that the compensation paid to silicosis cases should be paid from the Treasury of the United States?

Mr. LEE. I didn't quite understand.

Mr. ELLIOTT. Is it the gentleman's contention that compensation for silicosis cases should be paid by the Federal Government direct to the person with silicosis?

Mr. LEE. I think that due to the fact that there are so many contentions in regard to silicosis cases by various companies contending that the disease was not contracted in their properties that it would be absolutely necessary that it go into a Federal fund, that the compensation be paid by the Federal Government.

Mr. ELLIOTT. That's all.

Mr. METCALF. That's all, Mr. Lee, and thank you for coming and thank you for your testimony and for your appearance here.

I think that closes the witnesses we have over there and now I guess we will hear from the defendants.

STATEMENT OF JAMES T. FINLEN, WESTERN GENERAL COUNSEL, ANACONDA CO.

Mr. FINLEN. If the committee please, for the purposes of the record I identify myself as J. T. Finlen, western general counsel of the Anaconda Co.

It's not unusual at this time every other year to see one Congressman in either of the districts of the State looking through his district and preparing fences and saying hello, but it is an unusual privilege to bid welcome to three in one district at one time.

We join with the others in welcoming you to Butte and we hope that your visit here has been enjoyable as well as productive.

At this late hour I am not going to burden the committee by any attempt to introduce evidence at this time, but we will avail ourselves of the opportunity to present documentary evidence later on.

There is, however, one question I wish to address myself to specifically, and that is that from the sources of this subcommittee we were led to believe, or from communications we received in reference to this hearing and from the name of the subcommittee itself, that the scope or intent of the subcommittee had to do exclusively with problems of health and safety in underground mines.

Now, certain statements were made yesterday by witnesses from Anaconda, and other statements were made today by witnesses from Great Falls and a number of witnesses from Anaconda, that we didn't come prepared at this time to challenge those statements.

We believe that some statements of some of the witnesses yesterday testifying from Anaconda were certainly irresponsible and if it is within the scope of this committee, or this subcommittee, to consider health and safety conditions in surface plants such as exist in Anaconda or Great Falls we would like to be advised of that fact to the end that when our case, when it is presented, may encompass a reply to such accusations as the members of Great Falls and Anaconda unions have seen fit to offer.

Mr. METCALF. Mr. Finlen, in my letter to you and in the name of the committee, it was not within the scope of the investigation of this committee to look into smelters or health and safety in the smelters.

I feel that you should also mention and enumerate among the witnesses that appeared before the committee, not only with the witnesses from Anaconda and the witnesses from Great Falls, but the witness from the American Smelting & Refining Co. who testified

about the conditions in the East Helena smelter as a member of the Montana Mining Association.

As you know, all legislation that was introduced in the 84th Congress died when the Congress adjourned sine die. All future legislation that was introduced whether upon the recommendation of this subcommittee or upon the voluntary introduction by any Member of Congress, may or may not contain recommendations as to safety in smelters. So that when a request was made to this subcommittee to have members of Anaconda and Great Falls testify before the committee we felt that it would be helpful in our study of the overall problem to hear such testimony, and I think that it would be beneficial to our study in planning for future legislation if you too would submit an answer in response to some of the statements that were made yesterday and today. Does that clarify the scope of——

Mr. FINLEN. It certainly does, and we will be guided accordingly.

Mr. METCALF. Does that complete your statement?

Mr. FINLEN. It does.

Mr. METCALF. It's understood that much of the material that was shown us at that very profitable and informative demonstration by Mr. Warren will be submitted to the committee along with charts that you want inserted in the record, and its also understood by all present that the record is open; that further hearings and investigations are going to be made especially in November and December in Washington, at which time specialists and technicians are going to be asked to testify, and both the officials of the Anaconda Co. and the other witnesses who have testified here will have an opportunity to further extend their remarks in the record before it is printed; and they can do so by writing to me or, preferably, to the committee at the Committee of Education and Labor, House of Representatives, Washington, D. C.

At the suggestion of Mr. Elliott, we are going to—in order to put a deadline date it is suggested that all material as a result of these hearings be submitted by December 1.

Before these hearings close, I want to thank Judge Murray for permitting this committee to use his courtroom, and I want to thank the reporters who served us so very well. I want to specially thank Mr. Leary of the AFL–CIO, Mr. Stewart of the Mine, Mill, and Smelter Workers, Mr. Wilkinson, of the Anaconda Co., who have assisted the committee and the staff in making arrangements, and I want to thank our two staff members who have been here for their efficient help and assistance. I probably have overlooked some others, and I am very pleased with the patience of all the people who were here to testify, and I assure you that the members of the subcommittee feel that the trip to Butte was helpful, was informative, and was very much worth while; and, in addition to that, Mr. Finlen was also enjoyable.

Mr. ELLIOTT. Before we close, I would like to say that I have attended many hearings but this has been one of the best arranged and one of the most informative that I have had an opportunity to attend, and I want to join our chairman in expressing to you the thanks of the committee for the very helpful and considerate manner in which you have pursued the object of our hearings as it applies to your local situation; and I want to express what I am sure is the feeling of this subcommittee and of everybody concerned, the thanks for the very masterful way in which you, Mr. Chairman, have organized and made avail-

able to us the resources and the information that is available in this area of the country.

This has been my first opportunity to see at close hand the copper mining industry and I personally have learned, I think, a considerable amount about it that I didn't know before.

I believe this is your first chairmanship, isn't it, Mr. Chairman Metcalf?

Mr. METCALF. No; I was on the Fine Arts.

Mr. ELLIOTT. That's right. Well, do you have another subcommittee this fall, Lee?

Mr. METCALF. No; I am not on another subcommittee of this committee. I am on that special committee that was appointed by House resolution to look into uses of coal and research of coal in the coal industry. That's of the Committee of Interior.

Mr. ELLIOTT. I can see how your Representative in the Congress here would be so interested in these mining problems of every kind and nature after I had a chance to visit his district and visit the mines and see the mining operations and the way in which it is carried on here in the great State of Montana. Thank you very much, Mr. Chairman.

Mr. METCALF. I appreciate that tribute from my colleague, the gentleman from Alabama, and of course we are all very glad that he took the time out to come up here and help us with these committee hearings.

Unless there is anything else for the good of the order the committee will be in recess to reconvene at the call of the chairman in Ouray, Colo., on the 21st day of September.

(Whereupon the hearing in Butte, Mont., recessed at 5:30 p. m. mountain standard time, Wednesday, September 19, 1956, to reconvene at the call of the chairman in Ouray, Colo., on the 21st day of September 1956.)

MINE SAFETY (METALLIC AND NONMETALLIC MINES)

FRIDAY, SEPTEMBER 21, 1956

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON MINE SAFETY OF THE
COMMITTEE ON EDUCATION AND LABOR,
Ouray, Colo.

The subcommittee met at 9:30 a. m. in the courtroom of the county courthouse in Ouray, Colo., Hon. Lee Metcalf, chairman, presiding.

Present: Representative Elliott.

Also present: Representative Aspinall (in whose district the hearing was held).

Staff members present: John O. Graham, minority clerk; and Russell C. Derrickson, chief investigator.

The meeting was called to order by Chairman Metcalf, who then introduced Congressman Wayne Aspinall.

Mr. ASPINALL. Mr. Chairman, member of the subcommittee, Hon. Carl Elliott, and members of the staff, Mr. Derrickson and Mr. Graham. May I say that my colleague serving as chairman is Mr. Metcalf of Montana. I wish to welcome you and your staff to one of the richest and greatest mineral areas in our Nation. These two Members of Congress are true friends of this part of the Nation, and serving on the Subcommittee on Mining Safety of the House Education and Labor Committee, they are interested in anything that would benefit our area and its people. Both the men here, and the other members of the committee saw fit to support the upper Colorado River program. They are interested in bettering other matters in this area. This is a Subcommittee on Mining Safety. We have 19 standard committees, and of the 19, the committee which these men represent is one of the more important committees dealing with all matters affecting labor and education.

I asked Mr. William McCullough, who is one of Ouray's oldest oldtimers in the mining industry, if he could remember when a congressional committee saw fit to take its time to come into this area, and Ouray. He replied that in his experience it had never happened before.

The purpose of the hearing will be explained by Chairman Metcalf when I finish with my remarks.

The mining industry means a great deal to this area. The Ouray, Silverton, Telluride area of the San Juans has seen its high days and low days, and we figure on a better day soon, in the not too far distant future. Mr. Jess Larch is coming down today from one of our other great areas mining molybdenum and gold. Of course, there are other areas of Colorado that are important in the mining industry.

In our form of government we have three great departments: the legislative department is closest to the people. This is represented by the House of Representatives and the Senate. Of the two, the House of Representatives is much closer to the people, working more closely with them. We serve only a 2-year term, and must be elected by you every 2 years. The executive department, headed by the President of the United States, is responsible for administrating the laws as they are compounded by the legislative department. The judicial department is represented by the courts, and it is in one of these rooms in which we meet this morning. The legislative department uses its legislative power to find what are the needs and the wishes of the people. The Congress of the United States holds hearings and listens to the statements of the citizens, and it is in regard to that particular process of the law that we meet here today. We hold hearings such as this one being held here in Ouray this morning in your courthouse building, and from these hearings we can judge more ably what needs to be done. This subcommittee has held hearings in Minnesota and Montana most recently, and this will conclude their hearings for a short time, after which they will again be out in the field, hearing and taking testimony on matters which will be brought before them.

With that, Mr. Chairman, I again welcome you and your committee and staff. I hope those here this morning will be able to understand and not misinterpret the meaning for this hearing.

Mr. METCALF. I want to thank you, Congressman Aspinall, for your remarks.

This is a subcommittee of the Committee on Education and Labor, as Congressman Aspinall has stated. It has been appointed by the Honorable Graham Barden to make a study of mining safety. Bills were introduced in the 84th Congress to make a study on mining legislation. The purpose of this committee is to study the needs for mining safety, to find out whether or not there is a need for Federal mine inspection, and to find out if there is a necessity for Federal legislation. The membership of the subcommittee consists of five, including myself and Representative Carl Elliott, of Alabama, on my right today. The other members are unable to be here today. Testimony will be taken down by Mrs. John Jorgensen, servlng as clerk today.

As Congressman Aspinall has said, the way that we and the Congress learn about various legislation and the effect on various people of the country is to hold hearings.

Other members of the subcommittee who were unable to be here today with us are Congressman Phil Landrum, of Georgia; Congressman John Rhodes, of Arizona; and Congressman Orvin Fjare. I will recognize my colleague, Congressman Elliott, at this time.

Mr. ELLIOTT. Mr. Chairman, I wish to say for myself that I appreciate the opportunity to be here. I think I have never seen anything prettier than this beautiful area—a place that lives in legend and history in the development of gold and precious metals. I am happy to be here in the district of my long-time friend, Congressman Wayne Aspinall. We entered Congress together, and have served together, and have tried to do what we could toward the wonderful development of this part of the West. I was just telling Wayne Aspinall this morning that he seemed to hit the jackpot when he secured the approval and authorization for your water-resources development. You folks

are going to be in the position of having your water resources become extremely valuable to you in the near future.

This subcommittee is interested in finding out if you need Federal legislation to bring about a proper degree of safety in the mining industry. As far as I am concerned, I have no preconceived notions, but come with an open mind to find out if it is to the best interests of the people who mine, and their employers, that we have a revision of the mining safety laws. I had the privilege of serving on a similar committee recently on the safety legislation of the coal mines, and as soon as our legislation had gone into effect, the safety to those working and employed in these mines became considerably greater. I appreciate the fact that I am here to study the metallic mines situation, and to go into what may be done, if anything be necessary, in that field.

Mr. METCALF. Both my colleagues have mentioned the subcommittee and its works fully. I want to say a word about Congressman Wayne Aspinall. He and I served on a Committee of Peninsular Affairs, day after day, he is the chairman on that committee. I have always been impressed with the justice he administers on that committee, and I hope we can come close to his achievements. You may not be aware of the legislation that is necessary in getting a law before the Congress. The bill is introduced. There someone has to represent it, and it has to be entered on the floor, and motions to carry have to be made and presented in proper order. After the value of the bill has been determined, you have to go over the entire thing in the Senate. We are anxious to help in this situation where possible because of Wayne Aspinall's untiring energy in convincing us of the necessity of this legislation. I know that he understands the mining problems, timber and water problems of my district. I am happy to be here serving in his district for a change, and I am sure this session today will be very helpful.

This is a study committee. We are after information. We are not experts on mines and mining, and will only acquire such information as you can give us. The thing we want to know is what need there is for additional regulations, additional inspection and mine safety as far as the Federal Government is concerned. At the conclusion of the hearing, your information will be examined by the staff.

At this time, I would like to introduce our staff members, Mr. Russell Derrickson and Mr. John O. Graham. Their duty will be to sift and weigh your testimony and help write the report this committee will make to the Government.

We are here to learn, and know the information you are going to give us today will be helpful, and enable us to draft laws to help employees, miners, and everyone as a whole. Also at this time, I will announce that as you may wish to supplement any statement you may make today, you may do so by writing to the Committee on Education and Labor, 429 House Office Building, Washington 25, D. C. The deadline for this material is December 1 of this year. Mr. Hamblin will be our first witness, and I should like to call him forward at this time.

Mr. ASPINALL. At this time I would like to introduce Mr. Hamblin. We have heard from Mr. Hamblin more than any other person from this area. His home is down the valley a little bit, down in Montrose, and he has been diligent in helping us.

STATEMENT OF C. L. HAMBLIN, DISTRICT REPRESENTATIVE OF DISTRICT 50, UNITED MINE WORKERS OF AMERICA, MONTROSE, COLO.

Mr. HAMBLIN. I'm C. L. Hamblin, district representative of District 50, United Mine Workers of America. I live at 415 South Pitkin, Montrose, Colo.

Mr. METCALF. Give your statement in your own words, please.

Mr. HAMBLIN. I really want to tell you, I don't know exactly what it is that you are seeking, but I do feel that our Colorado mine-safety laws are antiquated, and do not accomplish what they should. I have always felt that maybe our States should try to handle these things, and stay away from Federal Government as a whole, but this may be one of the instances where the Federal Government should enter into things. I have here some of the instances that I feel are major, and some that are minor. These came to pass, to my knowledge, because of lack of proper regulations, and enforcement of same, causing death or severe injury to our people over a period of time.

I have worked underground 15 years in a quartz mine, and 6 in a coal mine. I was working in a coal mine when Congress decided to pass the Federal Coal Mine Safety Code which is now in effect. I think that it has done a lot of good. I wish we had something along those lines in our hard rock mining industry. It would greatly benefit the people working in those mines. In my jurisdiction are some mines, too, that are nonmetallic however. This is, as you probably are aware, the up-and-coming district of uranium development and the making of atomic energy is of great importance to our Nation. I think nonmetallic mines should be included in your consideration as to what Federal regulations you think we should have.

Mr. METCALF. What Federal regulations do you think we should have?

Mr. HAMBLIN. I think we should have something dealing with fire protection, for one thing. In 1 of our mines, 7 men were killed because of fire in a shop building on the outside. This happened about the early 1940's. I might explain it to tell why our laws are inadequate. We have a law where we have to have a fire door inside the portal of the tunnel. This is to have a long rope on it to run outside, which will burn through in case of fire, dropping the door to prevent gas and smoke from getting into the tunnel. There was a 5-foot steel prop holding the door up at this particular door, because the rope had been brushing against a mule and bothering. When the fire took place, the rope burned through, but the steel prop prevented the door from dropping and seven men died.

Mr. METCALF. If it had been inspected properly, the accident would not have occurred, and the men would not have been killed?

Mr. HAMBLIN. That's right. I also think there should be a law enforced about ladderways. You may not have a description of how our mines are worked. There are different levels at an angle, with ladderways leading to the various levels. The ladderways from one level to the other should be built in a uniform way, and the openings for the men should be uniform.

Mr. METCALF. So they can adjust to the regulated spacing and in case of emergency, or just everyday working, not be taken off balance or make a misstep?

Mr. HAMBLIN. Yes. And so as to cause no accident just by the irregularities alone. A man can make a misstep when he's used to a certain spacing, and maybe a rung has broken out and been replaced by a board being nailed on at a crooked angle, with no regard for spacing, so the next time he comes along, he hits it.

Mr. ASPINALL. You mean that they should be built uniformly so men would know just where to walk, and also where to reach them in case of emergency?

Mr. HAMBLIN. Yes. Our mining law states that ladders should go up at angles, too, to protect someone from falling rocks. This is not enforced.

Mr. METCALF. If a rung was broken out of a ladder and someone were to come along and nail a board on it, it would create a hazardous condition because of the miners being accustomed to uniform spacing.

Mr. HAMBLIN. We have some of our mines in this area where rock comes down and breaks out parts of the ladderways, and the men never do get it repaired in anyway, and the men have to use their instincts of monkeys and shinny around to get up the best way they can.

Most of these things we have tried to get corrected through our mine inspection, but it has more often failed. We have in our mills lots of wheels turning without guards or gateways to keep men from entering where they are not supposed to be. They should be replaced. Maybe some of these matters should be left to the State, but the State doesn't seem to take care of it. We have also a report of injuries that is to be made. This, too, is not done as it should be. Injuries are not reported to the proper authorities, and then when we have a hearing, the time limit having elapsed, the injured person is out in the cold, so far as injury is concerned, or getting it taken care of. We should have something—a penalty, for failure to pay our miners when injured.

Then, sometimes, men will work 2 weeks or a month, and the boss talks them into working another 2 weeks, fresh on the job, and they might work all summer with no pay, thinking the boss will come through eventually. They sometimes never do.

We should have a safety belt in ore bins or places where men are likely to slip. Men have been killed recently because they have no way out, and no support if they slip or miss their footing.

We should have a stronger blasting rule.

Mr. METCALF. What method of blasting do you use?

Mr. HAMBLIN. All methods. No one way. Mainly just a fuse with a cap, and then light it. Some places they have a patented fuse in use now.

Mr. METCALF. What does the law require?

Mr. HAMBLIN. Nothing. Most of our miners work wet, and I think some of our miners have lost their lives because when the fuse gets wet, as they are lighting it, from water dripping on it, they have to trim it, and sometimes they use up too much of the fuse that way—then they don't have time to get out of danger. If they were to use the electric fuse setup, they would be out of harm's way when the blast came.

We should have attention given to our hoist cables. When the cable fastened to the bucket the men ride in becomes frayed and frazzled, we have trouble getting the company to cut off 10 to 20 feet of it to redo it for safety's sake.

As to the dust in the mines, there is dust present in all the mines in the States having a mining industry. We should have a good, strong dust control. A lot of our young men are unable to work any more because of a lack of dust control.

Mr. METCALF. Are you speaking now of silicosis?

Mr. HAMBLIN. Yes. We have, in Colorado, an occupational disease sometimes called silicosis. You wouldn't ever get a reputable doctor to diagnose it as that, actually, because there must be silica in the air, and we haven't that here. However, rock dust in the lungs gives the same effect as what is called silicosis. I have seen men who are disabled entirely, to all working purposes. You cannot get silicosis from a mine without silica in it. And yet these men cannot work at all. They cannot draw any benefits. The doctor's won't diagnose it as silicosis, and if they do, there, again, is trouble, because the mines here do not have silica dust in the air. I have not been able to do anything for these men. One of the boys told me just last week that he was working in a place that was so dusty that he put six pads in his respirator, and it was so think with dust he could not see. He had to feel his way out, and he caught his fingers on a part of the conveyor belt. Fortunately, it didn't do any damage, but it could have torn his arm off, or his hand.

Mr. METCALF. Well, Mr. Hamblin, what do the doctors in Colorado call the disease of the lungs that goes with the breathing of this dust?

Mr. HAMBLIN. Silicosis, but the doctors of the State of Colorado say there is no such thing as silicosis here. And the only solution for the miner is to get away from the work he knows and does for a living, and he has no relief in sight, so he must keep on working. If you remove a man from the mine, you remove him from silicosis. That is the suggestion they receive, and the only suggestion to correct the situation.

Mr. ASPINALL. Has there been any attempt to use a more inclusive term in the State statutes?

Mr. HAMBLIN. I couldn't tell you that. The State statute tells you the silicosis is developed from silica rock dust.

Mr. ASPINALL. I remember when the statute was passed. It was not specifically hanging on a technical term such as that.

Mr. HAMBLIN. The State compensation can twist words around to suit themselves.

Mr. METCALF. I thought the term "pneumoconiosis" was the term for rock dust breathed into the lungs.

Mr. HAMBLIN. I had not heard that term mentioned anywhere, ever.

Mr. ASPINALL. Give that term to the next legislature of Colorado, and see what they do with it.

Mr. METCALF. May I suggest that Mr. Derrickson extract that portion of the record and mail it to Mr. Aspinall so he can give it to Mr. Hamblin?

Mr. HAMBLIN. We should also have our switchboxes locked. We had a man killed directly because of this switchbox not being kept locked. It should have been locked, and the key in his pocket. He had the fuse in his possession, and the box was left unlocked. Another man came along and inserted a fuse, and it killed the man later as he thought it was a dead box. The man should have locked it and taken the key with him. This law is not enforced very strictly.

Mr. ELLIOTT. Do you mean one of the members of your organization?

Mr. HAMBLIN. Yes.

Mr. ELLIOTT. How many men are in your organization?

Mr. HAMBLIN. About 850 to 900 men that I contact, personally.

Mr. ELLIOTT. Are there others belonging to other unions?

Mr. HAMBLIN. Not under my direct contact, but there are others in the area belonging to other or new unions.

Mr. ELLIOTT. Those were members of your union of which you spoke.

Mr. HAMBLIN. Yes; these are men that I, personally, have been contacted with.

Mr. ELLIOTT. Because of your membership and leadership with your union, you had contact with these men of whom you speak?

Mr. HAMBLIN. Yes; the switchbox should be locked always, and the box kept locked. The company that had this man working for them credited his death to a locked box that hadn't been cared for properly. I understand this has since been corrected by this one company, but it took a man's life to do it, and there are many others who do not comply with the law.

Here is another major issue. We have, at this time, diesel-operated motors running underground. We don't like it. We will, sometime in the near future, have atomic-powered motors. For now, we have the diesels and the fumes and gases are extremely dangerous. This should be taken care of.

We should have indicators on our hoists.

I do think we should have a Federal inspection. Maybe if certain changes were recommended, the laws would be followed that we already have.

It is not a good thing for a man to work alone in the mines. They should always have someone working with them so they can help each other in case of accident or injury to the one man.

The sanitation problem is another thing.

Ventilation is a major problem.

We should have a law to rehabilitate all our men who are working and are hurt or disabled in mining accidents. Some as young as 25 years of age are totally disabled for mining purposes, and yet they know nothing else, and some keep on working at risk of their lives, taking any job they can get at the mine.

Mr. ASPINALL. Mr. Chairman, I have a few questions here. I do not quite understand, Mr. Hamblin, when you say management could sometimes keep men working all summer long and still not pay them. Could you explain to me how this can be?

Mr. HAMBLIN. This mine boss was an especially good salesman. The man just kept on working because he hated to keep on looking for another job. He feels he will be paid. He is crazy for working even the 2 weeks, for no pay, in my estimation. Two weeks, at the most, is all you'd get out of me. But they can talk fast and sometimes manage to convince the men to stay on all summer. It has happened.

Mr. ASPINALL. You mean that they work and are never paid?

Mr. HAMBLIN. They go ahead and work, and there is no payday. There is no way to collect it, either.

Mr. ASPINALL. Even though the employer is solvent?

Mr. HAMBLIN. If the employee has money, he can tie the employer up in a suit, but it isn't often he has, and then he just has to figure it as profit and loss.

Mr. ASPINALL. How would the safety belt work that you mentioned?

Mr. HAMBLIN. It would have to be something fastened somewhere so it would hold them where they were at, and not allow them to be pulled farther in or to slip farther, in case they fell. Not long ago, as recent as this summer, a fellow fell 15 feet. He was standing above, on top of this chute where they pull ore down, and something happened to cause the ore to slip. Before the men got to him, the man was dead, even though he had a partner working with him.

Mr. ASPINALL. In your experience, Mr. Hamblin, if the State of Colorado would properly enforce the laws, could the State do the job without Federal Government intervention?

Mr. HAMBLIN. Yes, I think it could be done. I feel there are a few changes the laws need, though. And there are a few things the Federal Government should have some kind of control over, such as dust control, venting, and use of diesel- and atomic-powered machines. But not in timbering, and some of the more localized things. The Government could find out what things to use to counteract the gases and the dusts. But I feel the Federal Government should handle all of it, if the State cannot do it properly.

Mr. ASPINALL. Could it be lack of funds that causes this lack, or do you think it is indifference?

Mr. HAMBLIN. I will not state my own opinion, on that, but I have my suspicions.

Mr. ASPINALL. I think Mr. Hamblin has made a good contribution to the hearing today.

Mr. ELLIOTT. I wonder if you might have another copy of the Colorado mining laws to leave with the committee, for our references?

Mr. HAMBLIN. Yes.

Mr. METCALF. Mr. Hamblin, I am concerned with your statement concerning the dust. It has been a plague all over the mining areas. Do you think there should be some Federal compensation law for occupational diseases? That is, in addition to Federal inspection?

Mr. HAMBLIN. When we go before our State board, they find out if the man in question was wearing boots and a slicker and working in water. Of course, all our men work in water most of the time. They work in water when the dust is so thick you can hardly see. I've seen it that way many a time. But they're not interested, and if the man has what we generally call "silicosis", they tell him he must have got it in some other area of the United States, since Colorado has no silica dust in the mines.

Mr. METCALF. Mr. Hamblin, do you know if the members of your organization have worked in mines in Montana?

Mr. HAMBLIN. When we list the places we have worked, the past 10 years, we are complying with the requirements that we do so. When we put down Arizona or any other State in the Union than Colorado, we are taken away automatically from any possibility of disability payment on account of lung congestion due to rock dust.

Mr. METCALF. No one ever contracts silicosis in Montana, either. They get it in some other State. Perhaps, then, because of the transient nature of the occupation, and the necessity of changing jobs from

State to State, the time lapse causes a slowing down in the discovery of silicosis in its first stages, too.

Mr. HAMBLIN. Miners have usually been everywhere and back. Ours in Colorado are no different. They usually show experience in the industry in 2 or 3 other States.

Mr. METCALF. Are these people removed then from the industrial accident benefit for silicosis?

Mr. HAMBLIN. We have men here in the first 2 or 3 stages—there isn't much occasion where it is discovered in the first stage, and by the second stage it is quite severe. In the third stages, the man should not be working at all, at anything, much less in the mines. In the first stage, if a man goes to a doctor about it, there's a waiver. He signs it. He needs the job. He increases the silicosis situation in his body by doing that. The only cure for silicosis—or, rather, the only way to prolong the man's life—is for him to get out of mining and the dust connected with it. I don't believe there's ever been a case where the man was considered permanently disabled until he took his last breath. As long as he can still breathe, he is considered only partially disabled.

Mr. METCALF. Do the mines require an examination or a physical check-up?

Mr. HAMBLIN. Yes. Some aren't too severe, and some are more severe.

Mr. METCALF. Thank you, on behalf of the committee. It is statements such as yours that will help in drafting any proposed legislation.

Mr. HAMBLIN. I am interested in our welfare.

Mr. METCALF. So are we.

Call Mr. Sheahan.

STATEMENT OF GEORGE SHEAHAN, CHAIRMAN OF COMMITTEE FROM TELLURIDE, COLO., LOCAL 13187, UNITED MINE WORKERS OF AMERICA OF THE IDARADO MINING CO. (ACCOMPANIED BY MESSRS, SNOW, MacDONALD, STEIN, AND JOHNSON)

Mr. SHEAHAN. I'm George Sheahan, chairman of the committee from Telluride, representing Local 13187, United Mine Workers of America, of the Idarado Mining Co. Mr. Stein is with me today. He is the safety inspector at the Idarado.

Mr. ASPINAL. I want to say that Mr. Sheahan is here this morning because of the inability of Mr. George Cappis to appear. Mr. Sheahan is accompanied by Messrs. Snow, MacDonald, Stein, and Johnson, of Telluride.

Mr. SHEAHAN. We have two proposals. We think that the Federal Bureau of Mines should adopt the mining laws and enforce them. They are not enforced, but we feel that having the Federal Bureau of Mines inspection would improve the safety of the mines a good deal. Wetting diesels should be outlawed underground. Wetting the machines underground enters new hazards—and this practce was begun as soon as the dry machines were outlawed. The mine in Telluride hasn't the circulation to warrant diesels.

Mr. ELLIOTT. Do you have "certified" machines here as in the coal mines?

83066—56——18

Mr. SHEAHAN. No, sir. The State law states that there is a kind of exhaust conditioner to be used. These are not large enough to do the work as they should. There is a poisonous gas that cannot be extracted from diesel motors. The mine at Telluride hasn't the proper air ventilation to handle diesel motors underground, and the law states the amount required, which we do not have.

Mr. METCALF. Have you had any fatalities in the mine because of this situation?

Mr. SHEAHAN. We cannot prove it.

Mr. METCALF. Have you had any fatalities in the mine that might indicate this trouble?

Mr. SHEAHAN. We are told the gas acts the same as pneumonia. Within 6 to 8 hours you are dead once it gets to you. The cases where it has happened they have called it pneumonia. I've worked in the mines since 1935, and I think the diesel smell and exhaust the most hazardous thing we have in Telluride right now. There are other things, but I believe this to be the worst. Everything Mr. Hamblin talked about is covered in the State laws, as is this matter, only we cannot enforce it.

Mr. ASPINALL. You have taken these matters up with the proper authorities at the mine?

Mr. SHEAHAN. Yes; we have often.

Mr. ASPINALL. Have they been cooperative?

Mr. SHEAHAN. Not on diesels.

Mr. ASPINALL. Have they listened to any suggestions of the miners that additional safeguards be put around the diesels to carry this away?

Mr. SHEAHAN. There's nothing that can be done. It's in all the working areas in a thick gas.

Mr. ASPINALL. How many men have you lost because of this during the last year?

Mr. SHEAHAN. None that I know of. Those that have died from it we cannot prove that it was the cause of their death, due to the fact that it is always reported to be pneumonia.

Mr. ASPINALL. If we were to take the State laws and incorporate them into the Federal laws, do you feel the Federal law would be better than the State operation in enforcement?

Mr. SHEAHAN. We turn in complaints on safety hazards at this time and we get no results.

Mr. METCALF. Not even inspection or investigation?

Mr. SHEAHAN. That's right. You can't get anything done or the situation corrected.

Mr. ASPINALL. If you had a Federal law, do you think Federal intervention in a case like this would help matters any?

Mr. SHEAHAN. Yes, I do.

Mr. ELLIOTT. You have worked in the same mine since 1935?

Mr. SHEAHAN. Yes, mostly.

Mr. ELLIOTT. In your estimation, is it safer today than it was when you first began mining?

Mr. SHEAHAN. I don't think we have made any progress or advancement in safety in over 20 years. We have the same accidents we had then. Men fall in holes, get blown up, suffocate, and so forth.

Mr. ELLIOTT. Do you have union mine safety committees? And do you discuss these things and the need for the improvements?

Mr. SHEAHAN. We always bring these things to our employer's attention.

Mr. ELLIOTT. Does this result in improvements being made?

Mr. SHEAHAN. Some are. Some are easy to take care of, and don't take too long to fix, and are taken care of right away. There is also a situation regarding our telephone system at the mine which is anything but ideal and certainly not in compliance with the stated laws governing the communication system in the mines. We have no contact with a doctor, nor from underground levels to the surface that are adequate.

Mr. ELLIOTT. Do you think safety laws being enforced would result in cutting accidents in mines by any great percentage—those laws which Colorado already has in effect?

Mr. SHEAHAN. I certainly do.

Mr. ELLIOTT. Do you think the Government should enter this field?

Mr. SHEAHAN. Yes; with an inspector to come around periodically and make suggestions and check that the law is being complied with. Maybe then, there would be some result.

Mr. METCALF. I am wondering how we could apply the laws in the other areas of the United States? Is it your suggestion, or would you feel it to be a good thing to adopt the State mining laws of Colorado and those of the other States, and combine them? Or do you feel that the State of Colorado has, if enforced, an adequate mining code?

Mr. SHEAHAN. Arizona has better mining laws than Colorado, I think. I think it would be good to adopt the laws and combine them from all States, into a Federal law.

Mr. METCALF. The way the legislation is—it is necessary to have an advisory committee appointed by the Secretary of the Interior. He shall appoint not more than 3 men—these 3 to be representatives of various employee organizations (there might be someone from the United Mine Workers of America, someone from smelting, and someone from steel), and 3 from other management organizations. Would you feel this to be a satisfactory way to work out a mining code for the Nation? Do you feel we should pick up the Colorado code? They would consider the laws of the other States. We found the Michigan laws need revision and had not been amended for many years. Colorado's laws do authorize the commission of mines to close down when lives are in danger. Do you know of any instance of a mine being closed down because of safety precaution?

Mr. SHEAHAN. No.

Mr. METCALF. The failure of the State of Colorado is enforcement. Would you feel that if these laws were adequately and properly enforced, many of the conditions would be taken care of?

Mr. SHEAHAN. Yes.

Mr. METCALF. That is all, unless there are further questions. Will the next witness, Mr. Jess Larch, take the stand?

STATEMENT OF JESS LARCH, PAST PRESIDENT OF CLIMAX MOLYBDENUM UNION, CURRENTLY SECRETARY-TREASURER OF NONFERROUS METALS COUNCIL OF METAL TRADES DEPARTMENT, AFL–CIO, LEADVILLE, COLO.

Mr. ASPINALL. Mr. Chairman, Mr. Larch, from the Leadville area, wrote me a letter last week, stating his desire to be present and to make

his testimony at this hearing. He said that he would take as much time as the committee would allow him. I wish to say that Mr. Larch and Mr. Don Roll and Mr. Clarence Gray have been most cooperative in just getting here this morning. They have come through windstorms and blizzards, and have had a long drive, and I'm happy they got here in time to present their testimony to you. It is a pleasure, Mr. Larch, to welcome you all, and you are in good hands.

Mr. METCALF. It is a pleasure to have you here today, and we thank you for coming. Will you please state your name, occupation, and address?

Mr. LARCH. I am Jess Larch, past president of Climax Molybdenum Union, currently secretary-treasurer of the nonferrous metals council of the metal trades department of the AFL-CIO. My home is in Leadville.

Mr. METCALF. How many employees are under your jurisdiction?

Mr. LARCH. Seventy-five thousand employees in the industry, of of which there are about 3,000 in Colorado. The nonferrous metal council is composed of local unions, international unions, local trades council in Oklahoma, New Mexico, Arizona, Nevada, Utah, Colorado, Wyoming, Montana, and Idaho. My interest in mining safety stems, perhaps, from a personal one. I earn my living in this industry, and would like to have my life prolonged so long as I can without deformations and cripplings. I have seen men who have been killed in the industry because of State laws violated. In 8 out of 10 deaths in the State of Colorado, you can lay it to violation of the State laws.

Mr. ASPINALL. You mean that those enforcing the laws have not properly done so?

Mr. LARCH. I have checked the annual report of the State mine commissioner stating accidents for the year in the industry. In the 1953 report and the 1954 report I find that from indications in these books you would gather that from 10 to 14 people are killed annually in the industry. That's 10 to 14 out of 10,000. I do not have the 1955 report. This is taken from page 56 of the 1953 report and page 40 of the 1954 report.

Mr. ELLIOTT. That was 10 to 14 deaths?

Mr. LARCH. Yes. If projected to a like number of people driving cars who are killed driving, it would indicate that the mining industry is as hazardous as driving on the highways. It is a gross crime that any employee of a mining company is killed, because the mining law has been violated. Mining is actually four times as hazardous as driving on the highway, as is shown by statistics. For every 1 fatal injury, we have 150 nonfatal injuries and disabilities, and 1,500 minor injuries. Mining accidents haven't caused much concern. In 1954, 110,208 days of work were lost because of injury in this industry. This represented over $1 million lost in wages. I believe accidents can be prevented if the laws which have been passed to cover a type of work such as this, would be enforced, and the amount and type of accidents will not be of as serious a nature.

In 1954, the Climax Molybdenum Co. lost three men in their work. All three were my friends. The first killed was Woods. I doubted the report of the mine inspector. He listed the death as caused by suffocation. In a mine today where the proper laws are complied with, this is an impossibility. Taking my feelings and thoughts with

me, I approached John Doyle, then asked him to call an inquest into Woods' death. He refused and invited me to see Mr. Scott, who was his superior. I went to Denver and met Mr. Scott and asked him if he would not call an inquest to determine Woods' death. Scott refused. He begged me to bear with him until January 1, 1955, when the State of Colorado would issue a new code of mining laws, and he asked me if I would serve as adviser to him concerning these laws. I accepted. He, in turn, said he would see I was given a preliminary copy of the code and after study, I decided that they were the best I had ever seen in the mining industry. In early January, I went to Climax, when the code was distributed throughout the State of Colorado, and I asked them if they would not bring their operation into compliance with the State laws. They said "No." They wanted to write to Scott, and see if he would make a more liberal interpretation of the law for them. I objected to Mr. Scott, to the company, and to Governor Johnson about this unorthodox procedure, and I made the statement that the Climax Co. should be no exception to the rule. Governor Johnson showed sympathy, stating that if the State of Colorado was to have laws, they would be enforced. Accepting that, and accepting the fact that I believed Governor Johnson's word would be enforced, I went back and reported to Leadville. As 1955 proceeded, the old conditions did not improve. Again, I contacted all the three aforementioned parties and objected that they were not complying with the laws. The Climax Co. stated that they had been given a promise by Mr. Scott that they could do as they pleased, with only a few reservations. I again took up the program with Scott and Governor Johnson. Mr. Scott told me that only parts of what the Climax Co. had asked for had been granted by himself. Other parts he claimed he had refused and had told them to comply with the laws. Upon proceeding for another year with still no compliance with law, and learning that Congressman Metcalf was at the head of the committee making inquiry into the matter of a Federal code, I immediately asked all of my friends to use their influence to permit me to present myself at this hearing, and to bring my testimony to the committee. In an industry as large as the metal-mining industry, it is a crime when any employee of that industry is killed because of negligence regarding the mining laws.

I have with me today a copy of the Colorado Mining Laws, with rules and regulations, published June 30, 1954, wherein I have marked each section and each part that is being violated in Colorado today. Over 300 sections are marked.

Mr. METCALF. Is that bulletin No. 16?

Mr. LARCH. Yes, sir.

Mr. METCALF. You may leave your marked copy. This bulletin has already been incorporated into this testimony. Yours will also be incorporated in the committee file.

Mr. LARCH. I have the personal files of Governor Johnson, concerning my discussions with him and myself, between Mr. Johnson and Walter Scott, which show that even those sections of the law which Mr. Scott had indicated must be complied with to the Climax Co., were not being obeyed. There is complete ignorance of interpretation of these laws in the mines throughout the State, and I speak in particular here today of Climax Molybdenum. It is my belief that the

metals-mining industry in this country of ours needs a code of law that will be enforced. It is a pitiful situation in the State of Colorado when the mining commission has refused, when asked, to enforce the laws.

Mr. ASPINALL. Give us some illustrations and evidence for us later this afternoon—specific instances wherein the laws in the book you hold have not been complied with. Perhaps you can state which laws you feel are not being enforced in the State by the commission, where they have been asked to do so and have refused.

Mr. METCALF. Before we recess for lunch, will you tell us if you know whether or not Mr. Scott was elected or appointed?

Mr. LARCH. He is appointed.

Mr. METCALF. For what term?

Mr. LARCH. For a 3-year term, in my understanding. I discussed Mr. Scott with Governor Johnson, who stated that if I had objected at the time, he would never have made the appointment. I was under the impression that at that time, as soon as bulletin No. 16 came out, Scott would enforce the law and, therefore, I didn't object to his being appointed.

Mr. METCALF. I hope you will go through that file of yours and find specific instances that will be pertinent to the matter of this hearing this afternoon. We will adjourn for lunch and resume at 1:30 p. m.

AFTER RECESS

STATEMENT OF JESS LARCH—Resumed

Mr. METCALF. The committee will come to order and resume with Mr. Larch's testimony. Mr. Larch, will you complete your statement?

Mr. LARCH. This morning I made several statements which could have been taken by the committee as directed personally, and I would like at this time to state that this was not intended. The people I referred to and spoke of were friends of long standing, but that doesn't alter the fact that these laws were violated, and there have been many similar instances of which I shall speak this afternoon.

Mr. METCALF. Do you think, in your opinion, there is a need for this type of Federal regulation, with Federal inspection, recommendations, and perhaps an incorporation of the various State codes in some cases where it may seem necessary?

Mr. LARCH. Yes; there is a need. I think the higher plane of Government should have and enforce our Code of Mining Laws to protect the workmen in the industry. Last year two people from out of State were over hunting uranium, and they entered an old mine tunnel. They were found later, dead of asphyxiation from gases. Had the State laws been complied with, the old tunnel would have been sealed off. I will, this afternoon, go through special instances and violations of law which could very easily cause loss of life. I, personally, have asked that these be enforced, and they have not been enforced, and are not enforced today.

On page 71 of bulletin No. 16 of the Colorado Mining Laws, section 80–7–2, dealing with the 8-hour day and emergencies, it states:

> The period of employment of men working in all underground mines, underground workings, open-cut workings, open-pit workings, smelters, reduction works, stamp mills, concentrating mills, chlorination processes, cyanide processes,

and coke ovens shall not exceed 8 hours within any 24 hours except in cases of emergency where life or property is in imminent danger.

During my 10 years as president of Climax Uranium & Molybdenum Union, I made a study of the times of day the accidents seem to happen to people, and I found that they happen mostly when they are tired. I think that this is a very important part of the law, and it is essential to the abilities of the employees in the industry.

Mr. METCALF. Hours of work are one of the special things you negotiate for in a contract with you employer; are they not? Don't you think that could be taken care of with your employer in most cases?

Mr. LARCH. We have a standard 40-hour week, with time and one-half for Saturdays. The employer can usually talk an employee into working longer hours, to the detriment of the employee's health and capabilities. This is outside the sphere of collective bargaining. We have had several times when the company has had employees working without stopping for their lunch period. We have discouraged that by adding that our regular agreement calls for double pay after 16 hours. Rarely anyone works longer than 16 hours, except in extreme emergencies. What the law calls for here is that there must be some life in danger or something of the company's in danger, as in case of cave-ins, flood, fire, or some such thing.

Here, on page 140 of the same bulletin, No. 16, section 28–4, the law states that—

Rubber gloves and boots shall be furnished by the employer and used by the employee when working in or near acids and acid sludges.

The company often fails in this. The employee would use them if they were furnished, for his own sake, and if they are not furnished, he does not feel he can afford them in most cases. He is pretty well burned after a period of time working without them. This does not cause any deaths, to my knowledge, but could cause loss of vision, or physical disfigurement. That, too, I have asked be enforced.

Mr. ASPINALL. It could also cause the loss of valuable time, and cause additional drain on workman's compensation funds.

Mr. LARCH. That's right.

Mr. METCALF. These things are important to the committee, to. We are concerned with the nonfatal accidents as well as the ones occasioning loss of life.

Mr. LARCH. For every fatal accident we have, we have 150 nonfatal disabling accidents, and 1,500 minor accidents.

On page 164, section 57–5, in bulletin No. 16, in connection with excavations, the law states:

Any open ditch, cut, flume, pond, reservoir, or any other such excavation or place shall also be enclosed and sufficiently safeguarded.

Here, all over western Colorado in the nonferrous industry, I see violations of this. It is written into the law that these places will be safeguarded, and I have asked that this be done. This is another instance where I have failed to get compliance.

Mr. METCALF. There are open ditches on every farm in Colorado, too.

Mr. LARCH. But not tailings ponds containing slimelike muds similar to quicksand.

Now in the law on explosives, page 164, section 58–2:

No employee shall be permitted to smoke, or wear an open light while handling explosives.

7. No explosive shall be used where there is insufficient ventilation to carry off all fumes, and no explosive shall be used which has deteriorated by prolonged or improper storage.

12. No employee or other person or persons shall be allowed to handle or assist in the handling of explosives in any way unless experienced in this work, and until he has received instructions from some other competent employee authorized by the employer to give him such instructions.

Section 59–1 on storage of explosives, states:

Explosives must be stored in magazines provided for that purpose alone, and under conditions which permit the greatest safety.

Section 59–4:

Explosives magazines must be kept locked at all times except when putting in or removing explosives, and they also must be kept clean, with no debris or dirt of any kind allowed to accumulate in or near a magazine.

Section 59–23:

Such box magazines shall be kept closed and securely locked when not in use, and when left in locations where there is no one in attendance, shall be securely fastened in place.

Section 59–30:

No explosive shall, at any time, be stored in any place where the accidental discharge thereof would cut off the escape of employees working in any mine, excavation, or quarry.

This climaxes the situation I am most familiar with. At Climax they don't like to use locks, even on outside magazines. I have asked that this be enforced, with no response.

On transportation of explosives, page 169, section 60–9, the law states further:

In transporting explosives, detonators, and capped fuses by train, underground, they shall be transported in specially built cars, the inside of which shall be lined with wood at least 2 inches thick, and with no metal exposed and, when practicable, detonators and capped fuses should not be carried on the same train with explosives.

Any kind of open car is sufficient to haul explosives in. They've been fortunate they've not had serious accidents in hauling explosives, but here, again, the law is not enforced.

Another violation of the laws dealing with explosives, on page 170, section 60–12, states:

All other transportation within the area where explosives are being carried shall be stopped during the period when explosives are being moved, and no employees except the train crew and powder men, shall ride in or on any train which is transporting explosives.

In supporting this rule and the law, we find that often the person transporting the explosives has to fight for his right to get into the mine. There is no enforcement of this ruling.

Mr. METCALF. We are not a committee of investigation. The committee is not concerned with certain of these violations for that reason, but we leave it to your judgment as to the ones that would apply.

Mr. LARCH. I'm trying to choose those which are representative. All are alike in one way. Every one of these violations, when I have asked for enforcement, has never been enforced to my knowledge, or the situations corrected.

Mr. METCALF. I think you have given us a few specific instances that are certainly relevant and of great importance. The Federal mine inspector could report these irregularities.

Mr. LARCH. Again I refer to the Colorado Mining Laws Bulletin No. 16, page 174, section 64–1 wherein it states:

> It shall be the duty of every employer to see that as many employees as possible, working for him, shall be trained in first aid, and at least 1 employee in every 10 shall have adequate first-aid training and a certificate from a recognized agency showing proficiency in such training.

And in the 1,300 members of our union, there are probably less than 10 having a certificate.

Mr. METCALF. The union seems to be at fault there.

Mr. LARCH. You're right. But the majority of the people using the first-aid classes are from the higher echelon of supervision and so on. Applications do go in for it.

The dust situation has been talked about here this morning at some length already. The silicosis problem is the same at Climax as it is at every other mine in the State having to combat the dust. They all do. Certainly in those places where efforts are made to get the dust controlled and out of the air, relief has been noted. But where a man goes to get relief, he runs into trouble. He cannot get disabled compensation because he cannot be considered disabled until he is in the third stage, and then he's dead, according to the law. The man can work through the first and second stages, and has to, usually, and that makes it worse. The only relief is to get out of the mine with the dust in it. To apply for compensation, the man has to be in the third stage, and then he's done for. For a man to be 100 percent disabled with rock dust in the lungs, or silicosis, he would no longer be breathing.

Mr. ASPINALL. As long as he can breathe and, of course, work, he is not considered disabled.

Mr. LARCH. That's right.

Mr. METCALF. In the State of Montana we have passed an action whereby a person who is 100 percent disabled by silicosis is eligible for help from the welfare, but only if 100 percent disabled. We have people drawing such compensation.

Mr. LARCH. How do you interpret "100 percent"?

Mr. METCALF. The third stage of silicosis.

Mr. LARCH. No doctor in Colorado would testify he was 100 percent disabled until he was dead. The Climax Uranium Co. has had seven men this past year who were disabled to the point they could no longer work. They have given the employees an amount each month out of the greatness of their heart.

Mr. ELLIOTT. Have they taken care of all of them?

Mr. LARCH. No.

Mr. ELLIOTT. The more exceptional cases?

Mr. LARCH. Yes, sir.

Mr. ELLIOTT. Would you be in favor of a Federal law, that is, a law to place in the National Institutes of Health an Institute of Industrial Health, to carry on research in this field?

Mr. LARCH. Yes, I would. It is my opinion that until the Government takes action to solve and investigate ways to combat these industrial diseases, they will never be taken care of. And there certainly is great need.

Mr. ELLIOTT. Do you feel that, in the past 10 years, safety conditions in the Colorado mines have improved? Or are they better today than 10 years ago?

Mr. LARCH. Not than 10 years ago. Better than 15 years ago, during the war rush, maybe. Immediately after the war, I believe there was a general tightening of safety procedures and practices. We had a period in Climax from 1946 to 1951 without a fatality. Since 1951 we have had six fatalities.

Mr. ELLIOTT. Where has that been?

Mr. LARCH. In the mine where I worked. It certainly is not as safe as it was 10 years ago.

Mr. ELLIOTT. No further questions. You may proceed with your testimony.

Mr. LARCH. I have been plugging this rule for 3 years now. On page 205, section 100–6, it states:

> Operators of roadbuilding equipment shall not be permitted to work alone, in isolated areas, where they are not in contact with some person who could assist them in case of accident or emergency.

No man should work alone. He needs someone in case of emergency, and in his time of need. This is certainly violated by all companies in the State in one degree or another. Men work alone, on the hour, in every company in the State, I am certain. I do not believe any man should work alone where he cannot get help from some other source when he urgently needs it.

Again, on page 208, section 104–3, the law states, regarding missed holes:

> When a blast has been fired, and it is not certain that all charges have exploded, no employee shall enter such working place within 30 minutes after the explosion, and no employee or other person shall be permitted to extract, or attempt to extract in any manner, explosives from any bore hole that has been charged, but shall put in a new primer and reblast the hole.

This regulation must be compiled with, but it is not.

On page 244, section 156–4, it states:

> Fresh and pure drinking water shall be made available to employees during working hours, and should be provided in a sanitary means, and the use of community drinking vessels is prohibited.

There is no means inside the mine at Climax where 800 people can get a fresh drink of water. The miner has to carry it to his shift in a bottle or other container, himself. I think that good, fresh drinking water is necessary to good health, and stale water is a source of disease and illness. This situation is prevalent in many other mines and should not be tolerated in an industry as large as this one.

Mr. ASPINALL. Have there been records of any sicknesses due to this?

Mr. LARCH. Of course, a man gets sick from it; his doctor tells him he has "taken something orally that has made him sick." He doens't know what it might be. It might be the water, but it would be a hard thing to pin down. There is, in Climax water, prevalent in the spring of the year, a fungus that increases, as the water stands, to a thick scum. It is nauseating, and at times extremely sickening. If water is carried to the mine in bottles all day, it is no longer fresh and certainly not pure.

I believe that about concludes the examples I will quote you here. Are there any questions?

Mr. ASPINALL. I would like to ask this question. As I understand it, Mr. Larch, your own personal philosophy is that what can be done and should be done is in accordance with your wishes so far as control of law and labor problems are concerned. That where the local or State law does not take care of it, then you feel it necessary to go to higher government for relief which is not forthcoming otherwise?

Mr. LARCH. Yes, sir. As long as these local governments will and do enforce these laws, then it is their business, but when they fail as they have done, then I feel it becomes time for someone higher up to make conditions safer, and bearable. I believe that there are not going to be many years before a code of highway law because the States do not take care of it. Too many people are getting hurt. This same thing is true in the metal mining industry.

Mr. ASPINALL. You understand the dislike of the American people for law enforcement?

Mr. LARCH. I'm all for it, when it's for the good of the American people.

Mr. METCALF. You understand that the legislation that is before this committee does not provide for any compulsion or Federal control, but for an annual inspection of the mines by a Federal mine inspector, and for special disaster inspectors. Do you think that such a part-way standing would be helpful toward getting local law enforcement?

Mr. LARCH. I am sure that it would. I thought, years ago, that the proper way to secure it would be to get publicity, but then political implications caused me to stay away from that. But in face of deaths in the industry, I'm sure I'm not alone in feeling something has to be done.

Mr. METCALF. Do you think there would be any benefit to the public, and mine owners and employees if the Federal Government were to receive annual reports and to compile reports to go out to the mines in the country as to how similar situations were met in other States?

Mr. LARCH. I am sure it would help. I think every safety law that has been written today is based on experience. Someone has been hurt or property has been damaged in order to compile this book of laws I hold here.

Mr. METCALF. Suppose we passed a law recommending to Congress that a law be passed for Federal mine inspection—that there be an inspection and report annually, dealing merely in recommendations as stated. Then what are the standards the inspector will use to impose the regulations?

Mr. LARCH. I think that when he comes to the State, he could pick up a manual for that State, and check as he goes through, and state where they are not complying with the laws or enforcing them.

Mr. METCALF. You do not believe the Federal Government needs to pass any further laws so long as we have a way of standard inspection to enforce the present laws? Perhaps we could incorporate the other State laws.

Mr. LARCH. Yes, that's right. The other States have, in some cases, laws we could profit by, and they, in turn, could profit by some of ours. Experience in someone being hurt or property being dam-

aged has resulted in the Colorado mining laws having been written, and that is true also in the case of the other States.

Mr. METCALF. I think the committee is awere of the ideas you have and you have greatly helped us here today and clearly presented a strong case. We want to thank you for coming down here and so ably presenting your views.

Mr. ASPINALL. I would like for Mr. Larch to take back to the union members our gratitude for authorizing him to come down here and to give his testimony.

Mr. METCALF. I concur. This has been a very informative session. Is there any further testimony by anyone else? If anyone so wishes, he may come forward at this time and state his opinions to the committee.

Mr. ASPINALL. Mr. Wallace W. Anderson, of Ouray, present supervisor of Marlou Mines, Inc., was here in the courtroom with us this morning. He was unable to remain, but he has left word authorizing me to state that he listened intently to the testimony taken this morning by the committee and that he is in complete agreement with the statements made at that time.

Mr. METCALF. There are members of Local 13187 of the United Mine Workers of America present. Would any one of you desire to come forward at this time, and volunteer any testimony?

STATEMENT OF M. H. MacDONALD, MINER AND MEMBER, LOCAL 13187, UNITED MINE WORKERS OF AMERICA, IDARADO MINES, TELLURIDE, COLO.

Mr. MACDONALD. I am M. H. MacDonald of Telluride, box 1. I'm a miner for the Idarado mines, on the Telluride side. What I'd like to know is, periodically they come up here and take dust samples. I don't know whether the company does it, or just who, but I do know that we never hear anything more. They never post anything or tell us how the samples came out.

Mr. METCALF. You feel that the dust content should be given publicity so the workers would know what it is?

Mr. MACDONALD. Yes, sir.

Mr. ASPINALL. And that they should be made available to any other member who is working in that operation?

Mr. MACDONALD. That's right. They just come in on Mondays and take them, and that is the last we see or hear of it.

Mr. METCALF. You should know when your health and so forth are endangered, certainly. Can you tell us what the standards are for silica content in the State of Colorado?

Mr. MACDONALD. No, sir. But I do know that they always take the samples the first thing Monday mornings, when the mine has been shut down over the weekend. I never see them doing that during the week, or at the end of the week, when the dust content would be higher and is usually pretty bad. I feel they should take several samplings and get a truer report than that first one Monday morning.

Mr. ELLIOTT. Have you ever heard of the Microdyne machine that filters the air?

Mr. MACDONALD. No, sir.

Mr. ELLIOTT. I understand that it is being used experimentally now.

Mr. METCALF. In the mine where you work, do they have electrostatic precipitators?

Mr. MACDONALD. To my knowledge, they had none.

I am particularly interested in the dust situation because it's serious in the mine where I work. Diesels are a problem, too, particularly in this mine, but they've already talked about that.

Mr. ELLIOTT. Are you positive that the dust sampling is taken only on Monday mornings?

Mr. MACDONALD. That's the only time I've seen it taken.

Mr. METCALF. There are no further questions. I take it that the rest of the United Mine Workers of America, Local 13187, are in accord with Mr. Sheahan's statements and do not wish to make any further remarks at this time. The members of the subcommittee appreciate the fact that you have taken the time to come here and help us with this difficult situation. We all know it will be met sometime on a National level or a State level, and that something must be done. Our thanks too, to Congressman Aspinall in taking the time to come here with us today. It is a busy period for him, and we are grateful to him for assisting us in this matter. You've all been most cooperative and helpful.

Mr. ASPINALL. I will return the compliment for Ouray, and the community, and wish to commend you on the orderliness and efficiency with which you have conducted the hearing today.

Mr. METCALF. In closing, I would like to put in a plug for the most beautiful area I have ever seen in my life. In all my travels—and we have some beautiful country where I come from, too—I have never seen anything to rival Ouray and this area. It leaves us breathless. Again, thank you all for coming.

(Whereupon the committee was recessed subject to the call of the Chair.)

MINE SAFETY (METALLIC AND NONMETALLIC MINES)

MONDAY, DECEMBER 3, 1956

UNITED STATES HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON MINE SAFETY OF THE
COMMITTEE ON EDUCATION AND LABOR,
Washington, D. C.

The subcommittee met at 10:15 a. m., pursuant to recess, in room 429, House Office Building, Hon. Lee Metcalf (chairman of the subcommittee) presiding.

Committee members present: Representatives Metcalf, Rhodes, Fjare, and Elliott.

Mr. METCALF. The subcommittee on Mine Safety of the Committee on Education and Labor will be in order.

This morning we are going to resume the hearings that were recessed in Butte, Mont., and in Ouray, Colo. We have also held field hearings in Minnesota. This morning we have all the members of the subcommittee present except Mr. Landrum, of Georgia, who was unable to be here, but who has been in attendance at some of the meetings.

On my left is Congressman Rhodes and Congressman Fjare, and on my right is Congressman Elliott, all of whom have participated as members of the subcommittee.

At this point in the record we will insert the report of the Department of the Interior, dated April 23, 1956, addressed to the chairman of this committee, the Honorable Graham A. Barden.

(The report is as follows:)

DEPARTMENT OF THE INTERIOR,
Washington, D. C., April 23, 1956.

Hon. GRAHAM A. BARDEN,
Chairman, Committee on Education and Labor,
House of Representatives, Washington, D. C.

MY DEAR MR. BARDEN: This responds to your request for the views of this Department on H. R. 9269, a bill relating to certain inspections and investigations in metallic and nonmetallic mines and quarries (excluding coal and lignite mines) for the purpose of obtaining information relating to health and safety conditions, accidents, and occupational diseases therein and for other purposes.

We recommend that the bill not be enacted.

The bill is patterned after the act of May 7, 1941 (55 Stat. 177), which preceded the Federal Coal Mine Safety Act of July 16, 1952 (66 Stat. 692; 30 U. S. C., secs. 471–483), pertaining to inspection of coal mines. In fact, the act of May 7, 1941, is incorporated as title I of the latter. Like the act of May 7, 1941, H. R. 9269 contains no powers of enforcement. Compliance with recommendations evolving from inspections would be purely voluntary. The only compulsory aspects of H. R. 9269 are the right of entry to make inspections and requiring the companies to report all accidents involving loss of life or bodily injury.

Available records show that both the frequency and severity rates of accidents occuring in metallic and nonmetallic mines and quarries are considerably lower

than those of coal mines. Moreover, the record of major disasters (single accidents in which five or more persons are killed) occurring in noncoal mines and quarries is much better than the record for coal mines. The principal causes of major disasters in coal mines have been explosions of gas and coal dust (except anthracite dust which is nonexplosive), and fires. The principal causes of major disasters in metallic and nonmetallic mines have been fires and inrushes of impounded water, whereas disasters in quarries have been caused principally by slides of ground and blasting. The foregoing is cited to show that the conditions leading to the adoption of legislation authorizing Federal inspection of coal mines do not exist to the same degree for metallic and nonmetallic mines and quarries.

It would be extremely difficult to prepare a uniform code or set of standards to cover all conditions and practices encountered in metallic and nonmetallic mines and quarries. Mining in such facilities is carried out under an extremely wide variety of conditions and practices, and reasonable standards and rules pertaining to health and safety conditions could be applied only in the broadest sense. This Department is of the opinion that the administration and regulation of safety practices with respect to metallic and nonmetallic mines and quarries, therefore, becomes a problem primarily of local concern.

The Department of the Interior believes that Federal activities with respect to health and safety conditions in metallic and nonmetallic mines and quarries should be confined to the types of activity now carried on by the Bureau of Mines. Such activities include accident-prevention courses for workmen and officials, assistance at disasters, investigation of disasters and unusual accidents, safety inspections at the request of companies, training in first aid, training in use of respiratory-protective equipment, dust and ventilation surveys, and publication of material on various aspects of health and safety, including accident statistics and analysis. There is evidence that these educational and safety-promotional activities have contributed to improved health and safety conditions in metallic and nonmetallic mines and quarries. This Department, therefore, believes that intensified effort should be directed along these lines if added appropriations should become available for such purposes.

The Bureau of the Budget has advised that there is no objection to the presentation of this report to your Committee.

Sincerely yours,

F. E. WORMSER,
Assistant Secretary of the Interior.

The first witness this morning is Mr. John A. Johnson, Chief, Division of Safety, for the Bureau of Mines.

STATEMENT OF JOHN A. JOHNSON, CHIEF, DIVISION OF SAFETY, BUREAU OF MINES, DEPARTMENT OF THE INTERIOR

Mr. METCALF. Have you a prepared statement, Mr. Johnson?

Mr. JOHNSON. No, Mr. Chairman; I have no prepared statement. I have several prepared tables on mine statistics that you have asked for, and several others that I have made up, but I have no prepared statement.

Mr. METCALF. We will be glad to hear anything that you may have. Mr. Johnson was with us in Minnesota, and, at that time, the members of the committee requested some information. He is also ready to provide other information from the Bureau of Mines.

Mr. Johnson, you may proceed in any way you see fit.

Mr. JOHNSON. I have one tabulation. It is a group of eight tables. I will call that group "A": Table 1 gives fatality experience at metallic, nonmetallic mines, stone quarries, and coal operations.

Mr. METCALF. Do you have copies of those tables for the members?

Mr. JOHNSON. Yes, I do.

Mr. METCALF. Could we have them, please?

Mr. JOHNSON. Yes, Mr. Chairman.

Those tables are quite lengthy, and I think it would take too much time to read them. There is a comparison of statistics for two 5-year periods. The first 5-year period is from 1945 through 1949, and the second 5-year period is from 1950 through 1954. Of the 8 separate tables I have only 1 copy of each. I do not have enough copies to go around.

Mr. METCALF. This is a complete set of tables.

Mr. JOHNSON. I did not have time to get them all typed. I have a few copies that were run off by a machine. Probably they would help.

Mr. METCALF. Unless there is objection, these tables will be incorporated and made a part of the record at this point, and then, Mr. Johnson, you can proceed to explain the tables or discuss them as you choose.

(The tables, group A referred to follow:)

GROUP A (TABLES 1–8, INCLUSIVE)

TABLE 1.—*Fatality experience at metal, nonmetallic, stone, and coal operations, 1945–54*

METAL MINES

Year and period	Underground mines		Open-pit		Total	
	Number fatalities	Frequency rate [1]	Number fatalities	Frequency rate [1]	Number fatalities	Frequency rate [1]
1945	86	0.78	10	0.33	96	0.68
1946	84	.80	6	.24	90	.69
1947	118	.96	8	.23	126	.80
1948	90	.72	14	.39	104	.64
1949	64	.58	5	.15	69	.48
5-year period, total	442	.77	43	.27	485	.66
1950	76	.70	8	.21	84	.57
1951	81	.71	14	.31	95	.60
1952	108	.94	9	.21	117	.74
1953	78	.72	14	.29	92	.59
1954	69	.74	17	.46	86	.66
5-year period, total	412	.76	62	.29	474	.63

NONMETALLIC MINERAL MINES

1945	15	0.95	1	0.11	16	0.65
1946	17	1.04	9	.86	26	.97
1947	10	.58	2	.17	12	.42
1948	9	.52	6	.56	15	.54
1949	9	.51	1	.11	10	.37
5-year period, total	60	.71	19	.37	79	.59
1950	11	.59	8	.82	19	.67
1951	13	.65	4	.39	17	.56
1952	7	.37	7	.70	14	.48
1953	20	.97	2	.20	22	.72
1954	5	.26	4	.39	9	.30
5-year period, total	56	.57	25	.50	81	.55

[1] Per million man-hours.

TABLE 1.—*Fatality experience at metal, nonmetallic, stone, and coal operations, 1945–54*—Continued

STONE QUARRIES

Year and period	Underground mines		Open quarry		Total	
	Number fatalities	Frequency rate [1]	Number fatalities	Frequency rate [1]	Number fatalities	Frequency rate [1]
1945	5	0.98	28	0.73	33	0.76
1946	7	.91	27	.49	34	.54
1947	8	.94	31	.53	39	.58
1948	5	.66	40	.64	45	.65
1949	9	1.20	38	.59	47	.66
5-year period total	34	.93	164	.59	198	.63
1950	3	.34	28	.41	31	.40
1951	7	.76	26	.39	33	.43
1952	8	.87	41	.61	49	.64
1953	2	.22	22	.32	24	.31
1954	2	.30	23	.36	25	.36
5-year period total	22	.51	140	.42	162	.43

COAL MINES [2]

1945	1,029	1.16	39	0.58	1,068	1.12
1946	926	1.15	41	.59	967	1.10
1947	1,106	1.27	52	.67	1,158	1.22
1948	935	1.15	63	.77	998	1.11
1949	560	.97	25	.41	585	.91
5-year period total	4,556	1.15	220	.62	4,776	1.11
1950	602	.94	39	.55	641	.90
1951	751	1.19	34	.52	785	1.13
1952	514	.97	33	.55	547	.92
1953	440	.96	21	.39	461	.90
1954	374	1.10	22	.48	396	1.02
5-year period total	2,681	1.03	149	.50	2,830	.98

[1] Per million man-hours.
[2] Strip pits.

TABLE 2.—*Injury experience at metal mines in the United States 1945–49 and 1950–54*

Year and period	Number of injuries			Frequency rate [1]		
	Fatal	Nonfatal	Total	Fatal	Nonfatal	Total
1945	96	6,922	7,018	0.68	48.99	49.67
1946	90	7,345	7,435	.69	56.32	57.01
1947	126	8,293	8,419	.80	52.81	53.61
1948	104	7,631	7,735	.64	47.25	47.89
1949	69	6,940	7,009	.48	48.07	48.55
5-year period, total	485	37,131	37,616			
5-year average	97	7,426	7,523	.66	50.54	51.20
1950	84	6,611	6,695	.57	44.74	45.31
1951	95	6,824	6,919	.60	42.81	43.41
1952	117	6,684	6,801	.74	42.13	42.87
1953	92	6,164	6,256	.59	39.36	39.95
1954	86	4,994	5,080	.66	38.27	38.93
5-year period, total	474	31,277	31,751			
5-year average	95	6,255	6,350	.63	41.54	42.17

[1] Per million man-hours.

TABLE 3.—*Injury experience at metal mines in the United States by industry groups, 1945–49 and 1950–54*

Industry and period	Number of injuries			Frequency rate [1]		
	Fatal	Nonfatal	Total	Fatal	Nonfatal	Total
Copper:						
1945–49 (average)	24	1,480	1,504	0.68	41.89	42.57
1950–54 (average)	24	1,194	1,218	.63	31.43	32.06
Gold-placer:						
1945–49	1	176	177	.17	29.53	29.70
1950–54	1	161	162	.22	35.57	35.79
Gold-silver:						
1945–49	10	980	990	.97	94.86	95.83
1950–54	10	854	864	1.29	110.23	111.52
Iron:						
1945–49	30	1,307	1,337	.55	23.77	24.32
1950–54	23	1,060	1,083	.38	17.28	17.66
Lead-zinc:						
1945–49	28	2,995	3,023	.83	88.44	89.27
1950–54	27	2,260	2,287	.93	77.67	78.60
Miscellaneous:						
1945–49	4	488	492	.62	75.84	76.46
1950–54	10	726	736	1.01	73.37	74.38
Total:						
1945–49	97	7,426	7,523	.66	50.54	51.20
1950–54	95	6,255	6,350	.63	41.54	42.17

[1] Per million man-hours.

TABLE 4.—*Injury experience at nonmetallic mines in the United States 1945–49 and 1950–54*

Year and period	Number of injuries			Frequency rate [1]		
	Fatal	Nonfatal	Total	Fatal	Nonfatal	Total
1945	16	1,145	1,161	0.65	46.52	47.17
1946	26	1,369	1,395	.97	50.94	51.91
1947	12	1,308	1,320	.42	45.40	45.82
1948	15	1,176	1,191	.54	42.33	42.87
1949	10	1,125	1,135	.37	41.75	42.12
5-year total	79	6,123	6,202			
5-year average	16	1,225	1,240	.59	45.36	45.95
1950	19	1,238	1,257	.67	43.51	44.18
1951	17	1,351	1,368	.56	44.84	45.40
1952	14	1,171	1,185	.48	40.44	40.92
1953	22	1,419	1,441	.72	46.54	47.26
1954	9	956	965	.30	32.34	32.64
5-year total	81	6,135	6,216			
5-year average	16	1,227	1,243	.55	41.57	42.12

[1] Per million man-hours.

TABLE 5.—*Injury experience at metallurgical plants in the United States 1945–49 and 1950–54*

Year and period	Number of injuries			Frequency rate [1]		
	Fatal	Nonfatal	Total	Fatal	Nonfatal	Total
1945	19	3,271	3,290	0.16	26.92	27.08
1946	20	2,794	2,814	.20	27.48	27.68
1947	21	3,228	3,249	.17	26.32	26.49
1948	14	2,749	2,763	.12	22.71	22.83
1949	23	2,567	2,590	.21	22.90	23.11
5-year total	97	14,609	14,706			
5-year average	19	2,922	2,941	.16	25.24	25.40
1950	29	2,574	2,603	.25	22.11	22.36
1951	16	2,714	2,730	.13	22.23	22.36
1952	16	2,853	2,869	.13	22.83	22.96
1953	12	2,824	2,836	.09	20.34	20.43
1954	16	2,578	2,594	.12	19.29	19.41
5-year total	89	13,543	13,632			
5-year average	18	2,709	2,727	.14	21.30	21.44

[1] Per million man-hours.

TABLE 6.—*Injury experience at ore-dressing plants in the United States by industry groups, 1945–49 and 1950–54*

Industry and period	Number of injuries			Frequency rate [1]		
	Fatal	Nonfatal	Total	Fatal	Nonfatal	Total
Copper:						
1945–49	2	291	293	0.13	19.53	19.66
1950–54	2	252	254	.12	15.21	15.33
Gold-silver:						
1945–49	1	93	94	.50	46.12	46.62
1950–54		48	48		34.56	34.56
Iron:						
1945–49	1	97	98	.16	15.07	15.23
1950–54	2	73	75	.27	9.74	10.01
Lead-zinc:						
1945–49	3	286	289	.33	31.19	31.52
1950–54	2	204	206	.26	26.63	26.89
Miscellaneous:						
1945–49	1	114	115	.33	37.84	38.17
1950–54		237	237		30.61	30.61
Total:						
1945–49	8	881	889	.23	24.79	25.02
1950–54	6	814	820	.15	19.92	20.07

[1] Per million man-hours.

TABLE 7.—*Injury experience at primary nonferrous reduction and refinery plants in the United States, by industry groups, 1945–49 and 1950–54*

Industry and year	Number of injuries			Frequency rate [1]		
	Fatal	Nonfatal	Total	Fatal	Nonfatal	Total
Copper:						
1945–49	5	575	580	0.17	19.78	19.95
1950–54	4	410	414	.14	14.10	14.24
Lead:						
1945–49	2	177	179	.21	18.64	18.85
1950–54	2	111	113	.22	12.24	12.46
Zinc:						
1945–49	2	880	882	.07	32.94	33.01
1950–54	4	785	789	.15	30.33	30.48
Miscellaneous:						
1945–49	1	410	411	.07	27.39	27.46
1950–54	2	588	590	.09	26.35	26.44
Total:						
1945–49	10	2,042	2,052	.12	25.45	25.57
1950–54	12	1,894	1,906	.14	21.94	22.08

[1] Per million man-hours.

TABLE 8.—*Injury frequency rates for selected mining and nonmining industries,[1] 1945–49 and 1950–54*

Industry	Frequency rate [2]	
	1945–49	1950–54
Stone quarrying	30.4	24.4
Trucking, local and long-distance	34.1	34.6
Heavy construction	39.5	34.8
Nonmetallic minerals mining	46.0	42.1
Metal mining	51.2	42.2
Highway and steel construction	44.4	43.0
Sawmills and planing mills	52.4	47.5
Coal mining	60.94	50.86
Stevedoring	73.4	78.2
Logging	92.1	87.7

[1] Nonmining injury rates supplied by Bureau of Labor Statistics. (These rates represent a 5-year average of frequency rates, unweighted.)
[2] Per million man-hours; fatal and nonfatal injuries combined.

Mr. JOHNSON. Table No. 1, as I read, is divided up into two 5-year periods, and also into various groups of mines. The first one is metal mines, the second one is nonmetallic mineral mines, the third one is quarries, and the fourth one is coal mines. That is just to give a comparison of these different groups. In these tables, it shows the fatalities for each of these groups as to underground mines and surface mines, and then the totals.

Unless there is any specific question you would want to ask, Mr. Chairman, I will proceed to the next table.

Mr. METCALF. Go ahead, Mr. Johnson.

Mr. ELLIOTT. Let me ask this question: Summarize the comparison between these various groups for us, in the number of frequency of items.

Mr. JOHNSON. In that group A, table 8?

Mr. ELLIOTT. Table 1, is what I am looking at.

Mr. JOHNSON. I have that summarized, again, on table No. 8, if you will turn to that.

Mr. ELLIOTT. Thank you.

Mr. JOHNSON. Table No. 8 is injury frequency rates for selected mining and nonmining industries for those same two 5-year periods. This table was put in this form to show the difference in the frequency rates for mining and other hazardous nonmining operations. You will note there on the top, stone quarrying had a frequency rate in 1950–54 of 24.4. That means there were 24.4 injuries per million manhours worked for that 5-year period.

The next down the line is trucking and local and long-distance hauling, with a frequency rate of 34.6. Heavy construction has a frequency rate of 34.8. Nonmetallic minerals, mining, had a frequency rate of 42.1.

Mr. ELLIOTT. That is primarily coal mining?

Mr. JOHNSON. No. Nonmetallic is sals, borax, and different things like that.

Mr. ELLIOTT. That does not include coal?

Mr. JOHNSON. No; it does not include coal. I will have that later on.

Mr. METCALF. Does it include quarries? Are quarries a separate category?

Mr. JOHNSON. Stone quarries are No. 1, the top on the list. No. 5 is metal mining. That would be iron ore, copper, gold, silver, and so forth. That has a frequency rate of 32.2. Highway and steel construction has a frequency rate of 43.0. Saw mills and planing mills, 47.5; coal mining—and that includes bituminous and anthracite mining—54.86; stevedoring, 78.2, and logging is high with 87.7.

Some of these figures were taken from the Bureau of Mines statistics and some from the Bureau of Labor Statistics and reports.

Mr. ELLIOTT. According to this table, you would say that logging has the highest injury frequency rates of any of the industry groups?

Mr. JOHNSON. Yes. That is, of the industry groups listed here. I think they pick them out that way. I don't know if there are any higher than that. I question if there are any higher than that.

Mr. RHODES. You picked these nonmining industries at random, I presume?

Mr. JOHNSON. No; I asked the Chief of our Statistics Branch to pick out those that would be comparable, that is, lower and higher, than our mining industry, and to pick out the industry that probably had the highest frequency rates. That is why we got down to logging, stevedoring, and so forth.

Mr. RHODES. Do you have any way of knowing how the accident rates in the mining industries compare to the average rate in other industries in the United States?

Mr. JOHNSON. Just these industries that we picked out and put in this table. Of the others, there were quite a lot and we did not want to include them all in the table. We wanted to pick out some that would be higher and lower than the mining industry. I do not have a copy of the Bureau of Labor Statistics, but I think we could get them from there.

If you want a figure for mining as a whole, that is, the metal, nonmetal, and quarrying, I think I have that here somewhere. I am not sure if I have that separate that way. I have a comparable figure for 1954 for coal mining, comparing coal mining with metal and nonmetallic mining for 1954. I don't have that typed up, but I can read it to you if you would like to have it.

For the year 1954, coal mining had 395 fatal accidents and 19,005 nonfatal injuries, with a total of 19,400 injuries, with a total frequency rate of 50.85. For metal and nonmetal mining, similar figures, fatalities were 95 in that same year, 1954, 5,950 nonfatal injuries, with a total of 6,045 injuries, and the total frequency rate was 37.77.

Mr. RHODES. Do you have any breakdown as to whether those nonfatal injuries were disabling or not?

Mr. JOHNSON. No; I do not have that.

Mr. RHODES. No figure as to the number?

Mr. JOHNSON. I could answer it this way, Congressman: Any figures that we have here called nonfatal injuries are injuries in which the employee lost at least 1 day from work—1 day or more from work. That is what we classify as nonfatal injury.

Mr. RHODES. No breakdown as to the number of man-hours lost because of nonfatal injuries?

Mr. JOHNSON. I don't have that. Later on in one of my other tables I have what we call the severity rate—that is, the number of days lost per thousand man-hours worked. I can give you that in one of the other tables when I come to that.

Mr. RHODES. That will be fine.

Mr. JOHNSON. Table 2 is a summary of injury experience, fatal and nonfatal, at metal mines in the United States, in the two 5-year periods, the first from 1945 to 1949, the second from 1950 to 1954. That also gives frequency rates; that is, the number of injuries or number of fatalities per million man-hours worked.

Table 3 is similar to table 2, except that it takes your metal mines and divides them into 6 or 7 various commodities, starting with copper, gold placer, gold and silver, underground mines, iron mines, lead-zinc mines, miscellaneous, and then the total. With that table, you could pick out which one of the different commodities, such as copper, lead-zinc, or iron ore, has the best frequency rate or the poorest frequency rate.

Table No. 4 is similar to tables 2 and 3. It gives similar statistics for nonmetallic mines in the United States for the same periods.

Table No. 5 in this group is similar statistics for metallurgical plants in the United States for the same periods.

Table No. 6 gives the fatal and nonfatal injuries and the frequency rates for various ore dressing plants in the United States, such as copper ore dressing plants, gold-silver, iron, lead-zinc, miscellaneous, and the total for these plants.

Table No. 7 is injury experience at primary nonferrous reduction and refinery plants in the United States by industry groups for the same periods. That is copper reduction refinery plants, lead-zinc, miscellaneous, and the total for that group.

Table No. 8, the last table in series A, is the one we read and it shows the various frequency rates for 10 various mining groups and nonmining groups.

If there are no further questions on those eight tables, I can proceed with others.

Mr. METCALF. Mr. Johnson, do any of these tables contain any figures as to injuries such as would be received from silica dust, or silicosis, or any of those injuries?

Mr. JOHNSON. I am not sure if I could answer that statement. I would say I question it. I don't think all of those are in here.

Mr. METCALF. That would not be classified as either a fatal or nonfatal injury in any of these tables, such as in copper, gold, or silver and in metallurgical plants?

Mr. JOHNSON. Probably in some States it would be classified as an injury and in other States it would not. I don't think I can answer that question.

Mr. METCALF. This is just a compilation of the States?

Mr. JOHNSON. That is right. We get the reports from the various mining companies on certain forms we send out each year and then we compile those in our branch of accident analysis.

Mr. METCALF. If the mining company reported silicosis as a nonfatal injury, it would be included?

Mr. JOHNSON. That is right.

Mr. METCALF. If it were not reported as such an injury, then it would not be included in these tables?

Mr. JOHNSON. That is right.

Mr. RHODES. When you have an injury initially reported as nonfatal and subsequently the man dies, do you know whether the records are changed to show 1 less nonfatal or 1 more fatal, or would that particular accident remain in both categories?

Mr. JOHNSON. No. For instance, if we put out figures for our last year that we have figures available, and they are not yet published but are just in sheets getting ready to be published, they will have what they call a preliminary figure. In the years following that, those figures may be revised to take care of figures such as you mentioned.

In table B, there is a tabulation showing employment, man-hours worked, injuries, fatal and nonfatal, and the frequency rates for metal and nonmetal mines in the various States in the United States for the period 1950–54.

Mr. METCALF. Since the members of the committee now have copies of tables B and C you may proceed.

(Tables B and C are as follows:)

TABLE B.—*Metal and nonmetal mines: Total employment, man-hours, and injuries, by State, 1950–54*

State	Employment		Injuries			Frequency rate			Relative rank	
	Men	Man-hours	Total	Fatal	Non-fatal	Total	Fatal	Non-fatal	By employment	Total injuries
United States	416,159	900,519,735	37,967	555	37,412	42.16	0.62	41.54		
Alabama	22,302	40,041,075	495	13	482	12.36	.32	12.04	5	20
Alaska	8,245	12,532,393	357	8	349	28.49	.64	27.85	15	22
Arizona	33,483	78,063,280	3,457	38	3,419	44.28	.49	43.80	3	2
Arkansas	3,579	7,503,795	385	4	381	51.31	.53	50.77	24	21
California	19,029	38,494,732	2,248	23	2,225	58.40	.60	57.80	8	7
Colorado	16,384	34,073,704	2,542	38	2,504	74.60	1.12	73.49	10	5
Connecticut	106	249,515	16		16	64.12		64.12	40	38
Florida	7,677	19,354,137	306	6	300	15.81	.31	15.50	16	27
Georgia	968	1,922,655	66	2	64	34.33	1.04	33.29	33	33
Idaho	19,958	45,207,231	5,651	38	5,613	125.00	.84	124.16	7	1
Illinois	2,589	5,296,033	324	8	316	61.18	1.51	59.67	29	25
Iowa	577	1,369,415	19		19	13.87		13.87	35	37
Kansas	2,833	5,509,636	318	4	314	57.72	.73	56.99	28	26
Kentucky	2,010	3,211,796	134		134	41.72		41.72	30	32
Louisiana	4,503	12,874,112	501	3	498	38.92	.23	38.68	21	19
Maine	166	144,456	7		7	48.46		48.46	39	40
Michigan	45,977	94,291,981	2,587	57	2,530	27.44	.60	26.83	2	4
Minnesota	64,049	139,090,602	1,397	29	1,368	10.04	.21	9.84	1	10
Missouri	13,368	26,956,865	731	10	721	27.12	.37	26.75	11	15
Montana	31,144	69,935,650	2,532	73	2,459	36.20	1.04	35.16	4	6
Nevada	13,245	27,949,038	2,025	28	1,997	72.45	1.00	71.45	12	8
New Hampshire	240	501,966	30		30	59.77		59.77	37	35
New Jersey	5,359	10,700,727	628	14	614	58.69	1.31	57.38	19	17
New Mexico	16,450	39,883,793	2,644	21	2,623	66.29	.53	65.77	9	3
New York	10,298	23,222,361	896	23	873	38.58	.99	37.59	13	14
North Carolina	3,380	7,065,876	674	6	668	95.39	.85	94.54	25	16
Ohio	285	683,729	13	1	12	19.01	1.46	17.55	36	39
Oklahoma	3,937	7,929,066	306	9	297	38.59	1.14	37.46	22	28
Oregon	859	1,040,592	40		40	38.44		38.44	34	34
Pennsylvania	2,949	6,399,470	140	4	136	21.88	.63	21.25	27	31
South Carolina	188	354,075	23	1	22	64.96	2.82	62.13	38	36
South Dakota	5,307	11,890,870	1,310	13	1,297	110.17	1.09	109.08	20	11
Tennessee	7,217	14,630,318	145	9	136	9.91	.62	9.30	17	30
Texas	9,145	24,982,245	1,076	4	1,072	43.07	.16	42.91	14	12
Utah	22,030	52,718,234	1,553	43	1,510	29.46	.82	28.64	6	9
Vermont	1,101	2,655,515	173	2	171	65.15	.75	64.39	32	29
Virginia	3,068	6,322,116	326	2	324	51.57	.32	51.25	26	24
Washington	3,642	8,235,530	969	12	957	117.66	1.46	116.20	23	13
Wisconsin	6,459	13,209,839	591	6	585	44.74	.45	44.29	18	18
Wyoming	1,957	3,830,636	327	3	324	85.36	.78	84.58	31	23
Other States [1]	96	190,676	5		5	26.22		26.22		

[1] Includes Delaware for 1951 only; Maryland for 1950, 1952, 1953, and 1954. Massachusetts for 1952 only. Nebraska for 1950 through 1954. North Dakota and Rhode Island for 1950 only.

TABLE C.—*Stone quarries: Total employment, man-hours, and injuries, by State, 1950–54*

State	Employment		Injuries			Frequency rate			Relative rank	
	Men	Man-hours	Total	Fatal	Non-fatal	Total	Fatal	Non-fatal	By employment	Total injuries
United States	415,002	932,793,574	22,756	262	22,494	24.40	0.28	24.11		
Alabama	12,279	28,339,690	455	7	448	16.06	.25	15.81	12	18
Arizona	1,040	2,595,796	112	8	104	43.15	3.08	40.06	39	35
Arkansas	1,871	4,811,809	114	1	113	23.69	.21	23.48	34	34
California	21,032	49,698,009	1,001	12	989	20.14	.24	19.90	5	7
Colorado	3,111	6,884,881	182	4	178	26.43	.58	25.85	28	32
Connecticut	1,575	3,636,619	132	2	130	36.30	.55	35.75	37	33
Florida	6,282	15,170,354	480	1	479	31.64	.07	31.57	23	16
Georgia	11,276	25,533,978	688	7	681	26.94	.27	26.67	13	13
Idaho	588	941,480	39		39	41.42		41.42	40	43
Illinois	16,845	36,968,276	892	9	883	24.13	.24	23.89	8	9
Indiana	22,191	50,246,784	1,057	10	1,047	21.04	.20	20.84	4	6
Iowa	10,685	24,888,316	403	7	396	16.19	.28	15.91	15	22
Kansas	9,737	21,296,955	407	6	401	19.11	.28	18.83	16	20
Kentucky	7,846	15,893,109	659	6	653	41.46	.38	41.09	22	14
Maine	2,606	5,686,590	213	1	212	37.46	.18	37.28	33	31
Maryland	5,019	11,376,064	313		313	27.51		27.51	26	26
Massachusetts	5,544	11,632,488	424	3	421	36.45	.26	36.19	25	19
Michigan	15,201	36,644,887	215	4	211	5.87	.11	5.76	10	30
Minnesota	8,303	17,270,040	739	4	735	42.79	.23	42.56	19	11
Missouri	24,497	48,650,808	1,344	8	1,336	27.63	.16	27.46	3	3
Montana	1,208	2,351,867	55	4	51	23.39	1.70	21.68	38	41
Nebraska	2,759	6,645,653	69		69	10.38		10.38	29	39
Nevada	418	984,444	69		69	70.09		70.09	42	38
New Hampshire	316	519,693	73		73	140.47		140.47	43	37
New Jersey	3,998	8,870,854	394	5	389	44.42	.56	43.85	14	23
New Mexico	182	287,204	13		13	45.26		45.26	44	44
New York	17,656	39,978,281	821	5	816	20.54	.13	20.41	7	10
North Carolina	7,808	16,411,740	475	4	471	28.94	.24	28.70	21	17
Ohio	34,957	82,562,906	1,923	23	1,900	23.29	.28	23.01	2	2
Oklahoma	4,710	11,829,538	274	3	271	23.16	.25	22.91	27	29
Oregon	2,731	5,336,223	407	3	404	76.27	.56	75.71	31	21
Pennsylvania	59,668	140,470,347	2,193	32	2,161	15.61	.23	15.38	1	1
Rhode Island	478	843,038	50	1	49	59.31	1.19	58.12	41	42
South Carolina	2,563	5,697,658	276	4	272	48.44	.70	47.74	32	28
South Dakota	2,795	6,436,255	277	2	275	43.04	.31	42.73	30	27
Tennessee	18,305	38,311,981	1,191	17	1,174	31.09	.44	30.64	6	4
Texas	12,798	33,253,934	688	8	680	20.69	.24	20.45	11	12
Utah	1,660	3,801,315	67	1	66	17.63	.26	17.36	35	40
Vermont	8,955	18,694,072	645	7	638	34.50	.37	34.13	18	15
Virginia	16,478	35,459,453	1,111	15	1,096	31.33	.42	30.91	9	5
Washington	5,724	11,299,531	326	9	317	28.85	.80	28.05	24	24
West Virginia	8,032	17,584,704	318	8	310	18.08	.45	17.63	20	25
Wisconsin	9,163	17,491,155	960	9	951	54.88	.51	54.37	17	8
Wyoming	1,608	3,670,124	101	1	100	27.52	.27	27.25	36	36
Other States [1] [2]	2,294	5,834,671	111	1	110	19.02	.17	18.85		

[1] Includes Delaware, Louisiana, and Mississippi, 1950–54; Nevada, 1953 and 1954 only; New Hampshire, 1953 and 1954 only; and New Mexico, 1950 and 1951 only.
[2] Mississippi included with other States in 1953 only.

Mr. JOHNSON. In table B, it is the total employment, man-hours worked, total injuries, that is, fatal and nonfatal, frequency rates, and over toward your right the last two columns show the relative rank. In other words, by employment, No. 1 would be the State with the highest employment. In the last column on the right-hand side, total injuries, for instance, No. 1 in that same case would be the one with the most injuries.

These figures are the totals for that 5-year period. In other words, in the top line, we have the United States, 416,159 men employed, and that means the total for the 5 years. That is not the number of men employed each year.

Are there any questions on table B that I could answer?

Mr. RHODES. Where did these figures come from?

Mr. JOHNSON. These figures came from the Branch of Accident Analysis of the United States Bureau of Mines.

Mr. RHODES. Did they come as a result of reports from various States?

Mr. JOHNSON. From the various mining companies.

Mr. RHODES. The various mining companies?

Mr. JOHNSON. That is right.

Mr. RHODES. Not from the State mining inspectors, but from the companies themselves?

Mr. JOHNSON. Most of our statistics are collected directly from the mining companies, and we may get some from the States. But I would say most of these are directly from the mining companies, on the form that we send out to them each year.

Mr. ELLIOTT. There is one question I would like to ask. Under Alabama, on table C, stone quarries, total employment, man-hours and injuries, by State, 1950–54, you show 12,279 men employed. Is that the average number employed for each of the years 1950–54 or is it the total number employed?

Mr. JOHNSON. It is the total number employed for that 5-year period.

Mr. ELLIOTT. Do you count 1 man, if he stays in employment for the entire period 1950–54, as just 1 person, or do you count him for each year. How do you do that?

Mr. JOHNSON. For each year. In other words, if we wanted to get the average employment per year, we would divide the 12,279 by 5, and that would give the average number of men employed each year during that period.

Mr. ELLIOTT. In other words, this is the total counting all over again each year?

Mr. JOHNSON. That is right. I will tell you the reason that was left that way. In order to get our frequency rates for the 5-year period, we use the total number of man-hours worked and the total number of injuries for that period in computing our frequency rate, to get an average. If we did not do that, if we put these down here separately for each year, it would mean making five separate tables.

Mr. METCALF. Mr. Johnson, all of this information, then, you have told Congressman Rhodes, is obtained by these reports that you get from the mining companies on the forms that you send out to the companies?

Mr. JOHNSON. That is right.

Mr. METCALF. Do you send out to all the mining companies in the United States?

Mr. JOHNSON. All that we know of. There may be some small mining companies that started operations a short time ago, and as soon as we find out they are operating we send them the forms.

Mr. METCALF. How do you find out about it? Do you have some of your fieldmen report, or do the States report?

Mr. JOHNSON. Both. Our fieldmen will find out in going around, and, also, we will go to the State department of mines and find out from their records. In a lot of States they have to have a permit to operate, and we will go to the State and their agencies and find any new mines that might have opened up.

Mr. METCALF. Is it compulsory that these mine operators answer your request for information?

Mr. JOHNSON. For noncoal mines; no. For coal mines, they must send in, but for noncoal mines they don't have to. It is not compulsory.

Mr. METCALF. It is strictly a voluntary response on their part?

Mr. JOHNSON. That is right.

Mr. METCALF. Are there any mines that refuse to supply the information you request?

Mr. JOHNSON. I could put it this way: They don't exactly refuse, but sometimes it takes a little while to get them from the smaller companies. In the large companies we have good results. In the smaller companies, sometimes we have to go back 3 or 4 times to get the forms from them.

Mr. METCALF. Could you give us an estimate of the percentage of the mines that do respond, that do make the reports?

Mr. JOHNSON. I asked that question to the Chief of our Accident Analysis Branch last week, and he said he would say approximately 75 percent of the mines submit the forms, and most of the mines that do not submit the forms are the real small mines. I think in that case it is a matter of bookkeeping, the clerical force, and things like that.

Mr. METCALF. You would say about 75 percent of the forms you send out are returned with the information requested?

Mr. JOHNSON. That is about it.

Mr. METCALF. And there would be more than 75 percent of the men employed in the mines which are in operation because larger mines are the ones that have the best record of cooperation?

Mr. JOHNSON. That is right. In other words, although we say 75 percent of the mines report, it is a much higher figure when we take the number of men employed.

Mr. METCALF. It might be as many as 90 percent of the men employed?

Mr. JOHNSON. That is right, or maybe higher.

Are there any other questions on table C that I can answer?

Mr. METCALF. I do not believe there are, Mr. Johnson.

Mr. RHODES. Mr. Chairman, before we leave table B, I have a question.

This covers the years 1950–54. In column 1, the men employed, is that the total of the number employed each year, Mr. Johnson?

Mr. JOHNSON. No; that is the total number for the 5-year period.

Mr. RHODES. You would derive this figure by adding the number employed in 1950 to the number employed in 1951, 1952, 1953, and 1954?

Mr. JOHNSON. That is right.

Mr. RHODES. This is not an average, then, and if you wanted to get an average you would have to divide this by 5; is that correct?

Mr. JOHNSON. That is correct.

Mr. METCALF. We now have tables D and E, Mr. Johnson.

(Tables D and E referred to above follow:)

TABLE D.—*Selected coverage and benefits, by extent of disability, under State workmen's compensation laws*

Date [1]	State	Benefits by extent of disability				Coverage		
		Death [2]	Permanent total [2]	Permanent partial [2]	Temporary total [2]	Type of law	Numerical exemptions	Occupational diseases
	Alabama [3]	$8,400	$11,200	$11,200	$8,400	Elective	8	Dust only.
	Alaska [3]	$15,000 [4]	$15,000 [5]	$14,400 [6]	$100 per week	Compulsory	None	Full.
	Arizona [3]	Up to $153.85 per week	$150 per week	$126.92 per week	$150 per week	do [7]	3 [8]	36.
1953	Arkansas	$8,000	$8,000	$8,000	$8,000	do	5 [9]	Full.
1955	California	$12,500 [4]	$35 per week	$35 per week	$9,600	do	None	Do.
1955	Colorado	$9,859.50	$31.50 per week	$8,190	$31.50 per week	Elective	4	24.
1955	Connecticut	$40 per week	$40 per week	$40 per week	$40 per week	do	3	Full.
	Delaware [3]	Up to $60 per week	$35 per week	$35 per week	$35 per week	Compulsory	3	Do.
1955	Florida	$35 per week	do	do	do	Elective	3	Do.
1956	Georgia	$25.50	$10,000	$6,000	$10,000	do	10	25.
1953	Idaho	$10,000 [10]	Up to $40 per week [5]	$25 per week	Up to $40 per week [5]	Compulsory	None	11.
1955	Illinois	$12,000 [4]	$12,000 [5]	$12,000	$12,000 [5]	do [11]	None	Full.
	Indiana [3]	$12,500	$12,500	$12,500	$12,500	Elective [12]	None	Do.
	Iowa [3]	$32 per week	$32 per week	$32 per week	$32 per week	do [12]	None	16.
	Kansas [3]	$12,500	do	do	do	do	None in mines	12.
1956	Kentucky	$9,500	$11,500	$9,500	$11,500	do	3	Only gas or smoke in mines; gas in all occupations.
	Louisiana [3]	$30 per week	$30 per week	$30 per week	$30 per week	do	None	6.
1955	Maine	$9,000	$12,000	do	$12,000	do	6	16.
1955	Maryland	$10,000	$15,000	$12,500	$5,000	Compulsory	None	Full.
1956	Massachusetts	$10,000 [13]	$35 per week [5]	$10,000	$10,000	do	4 [8]	Do.
1955	Michigan	Up to $40 per week [4]	Up to $42 per week [5]	Up to $42 per week	Up to $42 per week [5]	do	4 [8]	Do.
1953	Minnesota	$17,500	$18,000 [14]	$40 per week [15]	$40 per week	do	None	Do.
	Mississippi [3]	$8,600	$8,600	$8,600	$8,600	do	8	None.
	Missouri [3]	$12,000	$35 per week	$35 per week	$35 per week	Elective	11 [16]	Full.
1955	Montana	Up to $32.50 per week [4]	Up to $32.50 per week [5]	Up to $32.50 per week	Up to $32.50 per week [5]	do [17]	None	(18).
1955	Nebraska	$30 per week	$30 per week	$30 per week	$30 per week	do	None	Full.
1955	Nevada	Up to $36.92 per week [4]	Up to $47.76 [5 15]	$20.77 per week	Up to $41.54 per week	Compulsory	2 [8]	Do.
1955	New Hampshire	$11,250	$11,250	$33 per week	$11,250	do [7]	5	(19).
1953	New Jersey	$30 per week	$30 per week	$30 per week	$30 per week	Elective	None	Full.
	New Mexico [3]	do	do	do	do	do	4 [20]	32.
1955	New York	Up to $40 per week	$36 per week [15]	$36 per week [15]	$6,500	Compulsory	4 [21]	Full.
1955	North Carolina	$10,000	$10,000	$10,000	$10,000	Elective	5 [22]	27.
1956	North Dakota	Up to $30 per week [4]	$45.50 per week [5]	$31.50 per week	Up to $45.50 per week	Compulsory	None	Full.
1956	Ohio	$12,000	$40.25 per week	$10,000	$8,000	do	3	Do.
	Oklahoma [3]	$13,500	$28 per week	$28 per week	$28 per week	do	2	13.

See footnotes at end of table.

TABLE D.—*Selected coverage and benefits, by extent of disability, under State workmen's compensation laws*—Continued

Date[1]	State	Benefits by extent of disability				Coverage		
		Death[2]	Permanent total[2]	Permanent partial[2]	Temporary total[2]	Type of law	Numerical exemptions	Occupational diseases
1955	Oregon	Up to $39.23 per week[4]	Up to $61.15 per week[5]	$5,940	Up to $61.15 per week	Elective	None	Full.
1956	Pennsylvania	Up to $32.50 per week[4]	$20,000	$32.50 per week	$20,000	do	None	13.
1955	Rhode Island	$18 and $2 for each child.	$16,000	$24 per week	$16,000	Compulsory	4[8]	Full.
1956	South Carolina	$8,000	$8,000	$8,000	$8,000	Elective	15	Do.
1955	South Dakota	$9,000[4]	$9,000	$28 per week	$28 per week	do	None	25.
1955	Tennessee	$10,000	$10,000	$10,000	$10,000	do	5	9.[33]
	Texas[3]	$9,000	$25	$25 per week	$25 per week	do	3	46.
1955	Utah	$10,759.38[4]	$12,000[34]	$6,875	$10,725[5]	Compulsory	None	Full.
	Vermont[3]	$28 per week	$9,240	$28 per week[15]	$28 per week	Elective	6	7.
1956	Virginia	$8,100	$10,800	$10,800	$10,800	Compulsory	7	Full.
1955	Washington	Up to $40.38 per week[4]	Up to $46.15 per week[5]	$6,000	Up to $42.69 per week[4]	do	None	Do.
1954	West Virginia	$13.85 per week[26]	$30 per week	$30 per week	$30 per week	Elective	None	Do.
1955	Wisconsin	$13,000[35]	$45.50 per week[10]	$37 per week[15]	$45.50 per week[15]	Compulsory	3	Do.
	Wyoming[3]	$12,350[4]	Up to $27.69 per week	Up to $22.85 per week[5]	Up to $46.15 per week[4]	do	None	None.

[1] Date of copy of Workmen's Compensation law on file in the Branch of Accident Analysis.
[2] Amount posted is the maximum amount stated in Workmen's Compensation law.
[3] Data compiled by Bureau of Labor Standards, U. S. Department of Labor, published in supplement to Bull. No. 161, State Workmen's Compensation Laws—November 1955.
[4] According to number of dependents.
[5] According to number of dependents. In Massachusetts the aggregate for dependents limited to average weekly wage.
[6] Benefits for schedule injuries are fixed sums ranging from $300 to $7,200 and varying according to marital status and number of dependents; for nonschedule injuries benefits are in proportion to permanent total injuries, but may not exceed total of $14,400.
[7] Employees may reject act.
[8] Numerical exemption applies only to compulsory coverage.
[9] Contractor engaged in building or building repair work is covered if he employs 2 or more employees at any 1 time.
[10] $18 and $7,200 if dependents are other than widow and children; $20 and $8,000 if widow only; $25 and $10,000 if widow with children.
[11] Elective as to occupational diseases.
[12] Compulsory as to coal mine.
[13] Additional benefits for dependent child.
[14] After $18,000 paid OASI benefits credited against workmen's compensation benefits.
[15] Additional benefits in specific cases, such as for vocational rehabilitation, constant attendant, etc.
[16] If Workmen's Compensation Commission determines that employer of 10 or less employees is engaged in hazardous employment, such employer shall be covered unless he rejects act within 10 days.
[17] Elective as to hazardous employment, compulsory as to coal mining business.
[18] No provision in Workmen's Compensation Act for medical benefits, but separate act provides for payment of $65 per month from public funds to person totally disabled from silicosis, if they have been a resident of the State for 10 years.
[19] Covers silicosis and other pulmonary diseases, anthrax, lead poisoning, etc.
[20] The numerical exemption does not apply if injury occurs when at work on any structure 10 feet or more above the ground.
[21] Numerical exemption applies only in case of nonhazardous employments.
[22] Except in the case of individual sawmill and logging operators with less than 10 employees, etc.
[23] Full coverage permissible.
[24] After $12,000 paid by employer or carrier, additional payments for life made from combined injury fund.
[25] Maximum death benefits payable to the widow are $13,000, usually payable in weekly installments of 50 percent of weekly earnings. (Maximum weekly earnings, established in 1955 legislation, are $65.) However the industrial commission may vary the payments, depending upon the circumstances in each case. Additional benefits payable from children's fund to the widow for children under 16 years of age (13 percent of the widow's benefit is usually the weekly or monthly allowance made for each dependent child).
[26] Payable in lump sum to heirs at law.

attendant, etc.

TABLE E.—*Major disasters in the United States in which 5 or more lives were lost, 1950–54*

AT METAL AND NONMETAL MINES AND QUARRIES (EXCEPT COAL MINES)

Date	Product	Name of mine	Location	Nature of accident	Killed
1950–July 16	Lead, zinc	Lark, United States Smelting Refining & Mining Co.	Lark, Utah	Fire in battery-charging station	5
1952—July 24	Rock and stone	Arizona Precast Concrete Pit & Crusher	Apache Junction, Ariz	Collapse of loading trestle	5
Oct. 30	Gold prospect	Herron, Alpena Enterprises	Herron, Mich	Gas explosion in shaft	5
Total for 1952					10
1953—Nov. 5	Gilsonite	No. 1 incline, American Gilsonite Co	Bonanza, Utah	Dust explosion	8
1954—Mar. 31	Copper	Santa Rita open pit, Kennecott Copper Co	Santa Rita, N. Mex	Explosion of powder truck	5
Total for period					28

AT COAL MINES

Date	Name of mine	Location of mine	Nature of disaster	Killed
1951—Jan. 18	No. 1 mine, Burning Springs Colliery Co	Kermit, W. Va	Gas explosion	11
Mar. 29	Buttonwood Colliery, Glen Alden Coal Co	Wilkes-Barre, Pa	do	5
Oct. 15	Bunker, Trotter Coal Co	Cassville, W. Va	do	10
Oct. 31	United Gas No. 1, Truax-Traer Coal Co	Wevaco, W. Va	Dust explosion	12
Dec. 21	Orient No. 2 mine, Chicago, Wilmington & Franklin Coal Co.	West Frankfort, Ill	Gas and dust explosion	119
Total for 1951				157
1952—Feb. 1	Carpentertown	Carpentertown, Westmoreland County, Pa	Explosion	6
Mar. 2	Holmes slope, Cano & Martin, Inc	Forrestville, Pa	Inrush of water	5
Total for 1952				11
1953—Mar. 30	O'Brien Mine, O'Brien Coal Co	Lovilia, Iowa	Explosion	5
1954—Nov. 13	Jamison No. 9, Jamison Coal & Coke Co	Farmington, W. Va	do	16
Total for period				189

Mr. JOHNSON. Table D is taken from the various State reports, workmen's compensation laws, and it lists a selected coverage and benefits by the extent of disability for each of the various States in which we could get pamphlets on these figures. I have not had a chance to study this table myself. The first column on the left, after the States are listed, is the death benefits; the second column is permanent total disabilities; the third column is permanent partial disabilities; the fourth column is temporary total disabilities, and then the type of law, numerical exemptions, and occupational diseases. Some States cover all of these and some States don't cover all of these.

Mr. ELLIOTT. Which occupational diseases does this table purport to cover? Silicosis?

Mr. JOHNSON. If we go back to the table and take Alabama, the first State listed, under the last column on the right-hand side, under occupational diseases, it says it covers dust only. I did not have time to study this table. It was prepared for me shortly before I left. In my opinion that means that diseases from inhalation of dust is covered as compensable diseases.

Mr. ELLIOTT. I presume that as this refers to Alabama, it only lists awards made by the workmen's compensation commission, and does not include court cases?

Mr. JOHNSON. I don't think I could answer that personally, Mr. Congressman. I wonder if Dr. Flinn or Mr. Doyle would be more familiar with this than I am.

Mr. METCALF. We will direct our questions to them, then, when they testify.

Mr. RHODES. In the column headed "Occupational Diseases, Arizona, No. 36," I don't find any footnotes going up that high. I am wondering what that figure means.

Mr. JOHNSON. I do not have any here, either.

Mr. RHODES. I wonder if it could be a misprint?

Mr. JOHNSON. It looks as if that may be a misprint there. I think they all refer to footnotes.

Mr. FJARE. There is another one, No. 46.

Mr. METCALF. Some of these numbers in this last column, occupational diseases, obviously refer to footnotes, but other numbers have no relationship to the corresponding footnote number. These numbers, 24, 25, 11, for Idaho, and so forth, have some other reference; do they not, Mr. Johnson?

Mr. JOHNSON. I think they do, but I do not think I can tell you what they are. I am not familiar with that. I wonder if Dr. Flinn or Mr. Doyle can tell us about that.

Mr. METCALF. We will direct any questions as to table D to Dr. Flinn and Mr. Doyle, when they testify.

Mr. JOHNSON. Table E is a list of major disasters. We classify a major disaster as one in which five or more men are killed. This lists the major disasters at metal and nonmetal mines and quarries during the period 1950–54. That is on the first page. The second page is major disasters at coal mines during the same period, 1950–54. In other words, for metal and nonmetal mines they had 5 disasters during that period, with 28 men killed, and at coal mines they had 9 disasters during the same period with 189 men killed.

Mr. ELLIOTT. For purposes of reference, when did the new coal mine safety law go into effect?

Mr. JOHNSON. July or August 1952.

Mr. METCALF. Can you give us some information, then, as to the frequency of accidents which are not classified as major disasters and their relationship between metal and nonmetal mines, quarries, and coal mines?

Mr. JOHNSON. Yes. I think in table 8, under that first group I gave you, this group A, is the information.

Mr. METCALF. That coal mining would be on the frequency rate of table 8?

Mr. JOHNSON. That is right. Coal mining is third from the bottom. They have a frequency rate, for the period 1950–54, the average for those 5 years, of 50.86, where nonmetallic mining was 42.1 and metal mining was 42.2. That means the number of lost time injuries and fatalities, combined, per million man-hours worked.

Mr. METCALF. Then the point you are making here is that in major disasters, where five or more persons were killed or injured, the rate is considerably less in mines other than the coal mines?

Mr. JOHNSON. That is right.

Mr. METCALF. And in accidents that are less than major disasters, where between 1 and 5 are killed or injured, the rate is also less than in coal mines.

Mr. JOHNSON. That is right. The reason we are bringing this out is that in coal mines we have two definite hazards where you may get an explosion and kill a number of men, from explosive gas in the coal mine and also from explosive coal dust. You don't have the same hazards in metal and nonmetal mines.

Mr. METCALF. Mr. Johnson, does that complete your explanation of the tables?

Mr. JOHNSON. I have a few more publications. I do not know if you had these previously for the record or not, or if you would like to have them. There is a bulletin, the United States Bureau of Mines Bulletin, No. 461. It is an old bulletin but it gives accident statistics from 1910 to 1942 at metal and nonmetal mines in the United States. The second one is Bulletin No. 481, safety in the mining industry. I think that was published in 1950. That gives accident statistics for all types of mining, including coal and quarries.

Then I have Bulletin 566, which is injury experience in the quarry industry in 1953. I just have one copy of each of those, if you would like to have those for the record.

Mr. METCALF. Unless there is objection, we will have them inserted in the committee file for the use of the committee. You are submitting them for the committee's use?

Mr. JOHNSON. Yes.

Mr. METCALF. Unless there is objection, they will be inserted in the file of the committee.

(The document was filed with the committee.)

Mr. METCALF. We now have a table that you have designated table J.

(Table J referred to follows:)

TABLE J.—*General trend in metal and nonmetal mine injury rates*

Description	Trend (approximate)	
	Fatality rates	Nonfatal injury rates
Copper mines:		
1931–42 [1]	Down 20 percent	Up 2 percent.
1945–54 [2]	Down 7 percent	Down 25 percent.
Gold, silver, and miscellaneous:		
1931–42	Down 33 percent	Up 18 percent.
1945–54	Up 40 percent	Up 8 percent.
Iron mines:		
1931–42	Up 33 percent	Up 15 percent.
1945–54	Down 30 percent	Down 27 percent.
Lead-zinc mines:		
1931–42	Down 2 percent	Do.
1945–54	Up 12 percent	Down 12 percent.
Nonmetal mines:		
1931–42	Up 45 percent	Down 2 percent.
1945–54	Down 7 percent	Down 8 percent.
Total, all metal and nonmetal mines:		
1931–42	Down 21 percent	Up 8 percent.
1945–54	Down 4 percent	Down 16 percent.

[1] Rates for 1931–42 taken from bull. 461, pp. 66–75.
[2] Rates for 1945–54 taken from typed tabulations A–2 to A–4.

Mr. JOHNSON. I prepared this table to show the general trend in metal and nonmetal mine injury rates over two periods, 1931–42 and 1945–54. One of those bulletins that I gave you shows the trend from 1911 to 1931. At that time, from 1911 to 1931, frequency rates were computed on a different basis. They were computed on the basis of 1,300 man-days worked. In 1931 they changed the method of computing frequency rates to compute it as the number of injuries per million man-hours worked. That is why I am starting table J from 1931.

I am trying to show the trend from 1931 to 1954. I divided that up into the various commodities in metal mining. I have nonmetal mining by itself. In other words, you take copper mines, from 1931 to 1942, the fatality rate was going down, about 20 percent during that 10-year period, but the non-fatal-injury rate went up about 2 percent.

In the period 1945–54, the fatality rate went down and the non-fatal-injury rate went down. In gold, silver, and miscellaneous mining, in 1931–42, the fatality rate went down, the non-fatal-injury rate went up. In 1945–54, the fatality rate went up and the non-fatal-injury rate went up. Iron mines, from 1931 to 1942, the fatality rate went up and the non-fatal-injury rate went up. In 1945–54, both rates went down.

In lead-zinc mines, the period of 1931–42, the fatality rate went down, and non-fatal-injury rate went down. In the period 1945–54, the fatality rate went up, and the non-fatal-injury rate went down. Those are all metal mines that I have read so far.

Now, we come to the nonmetal mines. In 1931–42, the fatality rate went up, and the non-fatal-injury rate went down. In the period 1945–54, the fatality rate went down and the non-fatal-injury rate went down. The last one is the total of all these figures above, and for 1931–42 the fatality rate went down, and the non-fatal-injury

rate went up. For the period 1945–54, the fatality rate went down, and the nonfatal rate went down.

Mr. METCALF. You have two footnotes here, where you give the source of this information.

Mr. JOHNSON. That is correct. The first one, for rates from 1931–42, were taken from Bulletin 461, of which I have given you a copy.

Mr. METCALF. And which has been inserted in the files of the committee?

Mr. JOHNSON. Yes. The rates for 1945–54 were taken from typed tabulations I gave you, the first group A from table 2 and table 4 in that group. They are recomputed from figures in that group.

Mr. FJARE. Mr. Johnson, may I ask this question: Is anyone in the Bureau equipped to give us this information, or is the bulletin ready to give us the information, as to the factors affecting trends. I think it is important for the committee to know what the reasons are as to why the fatalities went up or down. Is that information available to the committee?

Mr. JOHNSON. I think it is in the bulletins. Our statisticians usually have a discussion of those tables and try to bring out the salient factors that occurred in industry during that time to change these rates.

Mr. FJARE. Mr. Chairman, would it be of as much interest to the committee as it would be to me, personally, to know some of those factors? I would like to know why in a certain period the fatalities went up and then in another period went down?

Mr. METCALF. The witness can supply the information.

Mr. FJARE. He says it is in the bulletins.

Mr. METCALF. If it is in the bulletins, I think we should have some members of our staff digest it and ascertain it, and then we can insert that part into the record.

Mr. FJARE. I thought maybe somebody from the Bureau could give us a résumé of it rather than go into a long detailed statement of it.

Mr. METCALF. Can someone from your staff or you give us some of the reasons?

Mr. FJARE. I am interested in the copper industry, and it indicates that during the period 1931–42, nonfatal injuries were up 2 percent during that period. From the period 1945–54, a downtrend of 25 percent, a very drastic change, occurred. I am interested in knowing, and I think the committee should be interested in knowing, what has transpired to cause this rather drastic change in the direction of nonfatal injuries? If someone from your Bureau can digest the bulletins and give us a brief résumé orally at the moment, I would like to know that.

Mr. METCALF. Can you do that, Mr. Johnson?

Mr. JOHNSON. I will try to have somebody do that. There is one thing that I can add. During my years of safety work, I have noted that sometimes during a war, we will find injury rates increasing.

Mr. FJARE. You say during the war they increase. Here we have a case where they actually decreased, in copper mining, for instance. A portion of that period was during World War II.

Mr. JOHNSON. That is right.

Mr. FJARE. That is contradictory to what you have to say. Do you understand? I am interested in knowing what was the contributing factor for the copper industry, for instance, to realize such a tremendous improvement in its nonfatal injury rates.

There are 3 years that are not covered in there. I do not know why that is necessary in there.

Mr. RHODES. On these percentages, take, for instance, the copper mines from 1931–32. They go down 20 percent. That is down 20 percent as to what? We are dealing with percentages here and we have to have some basis of comparison. Does it mean that it went down 20 percent from the year 1931 to the year 1932, during those 2 years?

Mr. JOHNSON. No; I will tell you the way I got the figures. You will notice each of those groups is a 10-year period, approximately. I divided those into two 5-year periods, and I would get the average for one 5-year period as compared to the average for another 5-year period.

Mr. FJARE. Did you pick them arbitrarily?

Mr. JOHNSON. No; I just took these because they were convenient tables to get from our tables in our bulletins.

Mr. FJARE. Why were 1943 and 1944 left out?

Mr. JOHNSON. The first one is taken from one source, 1931–42 is taken from the one bulletin I gave you. We did not have a similar bulletin covering the next few years. The next statistics I got were for the period 1945–54. There are really 3 years missing in there.

Mr. RHODES. Then as to the period 1945–54, actually the percentage which was quoted means that the last 5 years of that period had an accident rate which was, in the case of copper, nonfatal injuries, down 26 percent from the first 5 years of that period; is that correct?

Mr. JOHNSON. That is correct.

Mr. RHODES. How would the rate for copper, for nonfatal injuries, for the years 1950–54 compare with the rate for the years 1931–36?

Mr. JOHNSON. I cannot give you that here, but I think that is covered in the bulletins.

Mr. RHODES. Your table I does a pretty fair job of covering that for the 10-year period 1945–54.

Mr. JOHNSON. That is right.

Mr. RHODES. But you think that the bulletins will cover the years 1931–42 and then 1942–45?

Mr. JOHNSON. That is right. I think Bulletin 481 covers that quite well, and then also the smaller one I referred to. I think page 59 will give you something on that. Table 59 on page 59, has the frequency rate for fatalities in metal and nonmetallic mining industries, and for those 5-year periods, if you average them, there will be a consistent downward trend from 1911 through 1945.

Mr. METCALF. Mr. Johnson, could you prepare a statement for us for the record, and for the information of the committee, as to some of the contributing factors for the rise and fall in these trends in various years?

Mr. JOHNSON. Would it be all right if I prepared that for the various 5-year periods? That is, the way it is listed here?

Mr. METCALF. That is right, for the same period, so it will be correlated with the information you have on the last table.

Mr. JOHNSON. Yes, sir.

Mr. METCALF. Do you have any more tables to submit, Mr. Johnson?

Mr. JOHNSON. I think that just about covers it, Mr. Chairman.

Mr. METCALF. Do you have any questions, Mr. Elliott?

Mr. ELLIOTT. No, Mr. Chairman.

Mr. METCALF. Mr. Rhodes, and Mr. Fjare?

Mr. RHODES. No questions.

Mr. FJARE. No questions.

Mr. METCALF. Thank you for your testimony and for this material which has been submitted, Mr. Johnson. You will supply for the committee additional information which has been requested?

Mr. JOHNSON. That is correct. There are some more tables that they are working on now, and I will try to get a digest for the reasons in these ups and downs in the rates.

Mr. METCALF. For the record, tables A to J were submitted. Originally, we inserted A near the beginning of Mr. Johnson's testimony. The other tables will be inserted in the record at the time that they were first mentioned, B, C, and on through, except for F, G, and I, which have been incorporated and made a part of the tables of the committee. They will not be reproduced in the record.

Thank you, Mr. Johnson.

Mr. JOHNSON. Thank you.

Mr. METCALF. Our next witness is Dr. Robert Flinn, Chief of the Division of Health, Bureau of Mines. I understand that he is to be accompanied and assisted in his testimony by Mr. Henry Doyle, of the United States Public Health Service.

Dr. Flinn and Mr. Doyle, would you come forward now?

The committee will be glad to welcome you both to the committee.

Do you have a prepared statement or tables that you could supply us at this time?

STATEMENTS OF HENRY N. DOYLE, ASSISTANT CHIEF, OCCUPATIONAL HEALTH PROGRAM, PUBLIC HEALTH SERVICE, UNITED STATES DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE; AND DR. ROBERT E. FLINN, CHIEF, DIVISION OF HEALTH, BUREAU OF MINES, DEPARTMENT OF THE INTERIOR

Dr. FLINN. I do not have a prepared statement, Mr. Chairman, but I would like Mr. Doyle to open the discussion with his remarks.

Mr. METCALF. You may present your testimony in any way you see fit.

Dr. FLINN. Yes, sir, and I will then be glad to answer any questions.

Mr. METCALF. Very well. Mr. Doyle, we will be very glad to hear from you.

Mr. DOYLE. Mr. Chairman, I have some notes which I prepared regarding the work of the Public Health Service in silicosis research over the past years and to the present time. Also, I have some papers which I would like to put in each of the committee members' hands, because they contain tables which I may wish to refer to in the testimony.

Mr. METCALF. You may proceed.

Mr. DOYLE. The Public Health Service and the Bureau of Mines have long been concerned with the silicosis problem. Our interest dates back to 1914 when silicosis was a major occupational disease problem in the mining and other dusty industries. Beginning in 1914 a series of studies were initiated which culminated in the late 1930's. These dealt with the occurrence, pathology, and prevention of silicosis and other dust diseases. It was determined that silicosis, a disease of the lungs caused by the inhalation of free silicon dioxide,

was prevalent in many industries and that the disease was frequently associated with tuberculosis.

Engineering and medical methods were developed by which it was believed that the disease could be controlled or prevented. Striking reductions in the incidence of silicosis have resulted from the acceptance of these principles and their use in the design of ontrol measures.

In 1956, two decades following the culmination of the basic studies, the Public Health Service sought to determine the prevalence of silicosis in the United States. This study revealed that silicosis is still a major problem in many dusty industries. A total of 10,362 cases in a 5-year period occurring in 22 States was found, but it is known that this is an underestimate of the total problem.

The dust studies of the Public Health Service may be divided into three areas: First, those dealing with silica dust; second, those dealing with siliceous dusts, other than silica; and third, those dealing with coal.

In the silicosis area there were three major studies: the first in the tristate area of Oklahoma, Kansas, and Missouri, conducted during the years 1914–17. Of the 720 miners examined, 433, or 60 percent, were diagnosed as having miner's consumption, with tuberculosis as a complication in 103 cases. At this time medical knowledge regarding silicosis was far ahead of techniques for measuring the worker's exposure. Consequently, in this investigation very little information was developed about the environment. However, the investigators realized that the ultimate solution of the problem would depend on the correlation of the medical findings with dust concentration.

The tristate study formed the basis for a series of Public Health Service investigations during the twenties and thirties in the dusty trades, which include the cement, asbestos, coal, talc, and granite industries. By 1922, dust quantification methods had been improved, and thus it became possible to include in these studies investigations of the environment.

The study of the granite industry undertaken in 1924 was the first epidemiologic study of silicosis in which it was possible to correlate definitely the worker's physical condition with his environment. The granite study served to add materially to our knowledge of silicosis by constructing a graphic picture of what happened to men working many years under dust hazards of a known character. Among the significant findings were the sharp correlation between the disease and the length of exposure to the dust; the universal occurrence of silicosis among workers exposed to concentrations above 40 million particles per cubic foot of air; the almost invariably fatal form of the disease within a short time after the onset; and the large proportion of cases complicated with tuberculosis.

The study of silicosis in the pottery industry undertaken in the mid-1930's not only pointed up the prevalence of this disease in the pottery industry, but also disclosed the similarity of the pathology to the disease found in the granite and mining industries.

Studies in industries in which there was an exposure to siliceous dust other than silicon dioxide demonstrated that these dusts were also capable of causing a disease of the lungs similar in X-ray appearance to silicosis but with less disabling consequences to the worker. These studies were concerned with asbestos, talc, slate, and mica.

The first major investigation of dust conditions in the coal mines by the Public Health Service was conducted in the Pennsylvania anthracite mines in 1933. This study showed that 23 percent of the 2,700 miners examined were affected with anthracosilicosis. Anthracosilicosis was defined as a chronic disease due to breathing dust generated in the various processes involved in mining and preparation of anthracite coal.

A second coal study undertaken in the bituminous-coal mines of Utah indicated a less severe problem. Of 545 workers examined, anthracosilicosis was found in only 16 workers.

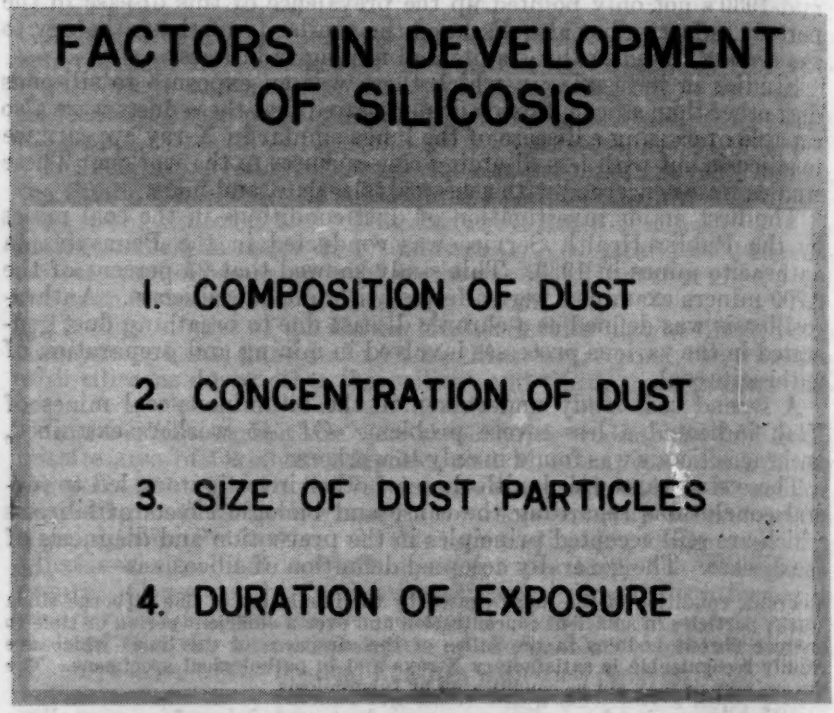
These studies, coupled with those of other investigators, led to several conclusions regarding the cause and biologic effects of silicosis which are still accepted principles in the prevention and diagnosis of the disease. The generally accepted definition of silicosis is—

a chronic condition of the lungs caused by the inhalation of fine airborne silica (SiO_2) particles in sufficient concentration and over a sufficient period of time to produce fibrous nodules in the salles of the airspaces of the lungs which are readily recognizable is satisfactory X-rays and in pathological specimens. The disease may or may not be complicated by tuberculosis.

Silicosis results from exposure to a dust containing free crystalline silica. When combined with other chemicals or when in the amorphous state, silica will not produce silicosis, but may produce other dust diseases of a less disabling character. The four cardinal factors in the development of silicosis are the mineral composition of the dust, the concentration of the dust, the size of the dust particle, and the duration of exposure.

Mr. Chairman, those are such important points that I have illustrated those on a chart which I have here, if someone could hold it up for me. Those are the four cardinal points in the development of silicosis: the composition of the dust, the concentration of the dust, the sizes of the dust particles, and the duration of the exposure.

(Chart referred to, Factors in Development of Silicosis, follows:)


FACTORS IN DEVELOPMENT OF SILICOSIS
1. COMPOSITION OF DUST
2. CONCENTRATION OF DUST
3. SIZE OF DUST PARTICLES
4. DURATION OF EXPOSURE

In the granite industry it was clearly evident that all workers exposed to dust concentrations in excess of 40 million particles per cubic foot of air for a period of 10 years or longer contracted the disease. There was little indication of any serious effect on the men with average exposure of about 20 million particles per cubic foot of air, whereas in the group where the average concentration was 6 million particles no unfavorable effects were discerned. Apparently, it is accepted generally that the concentration of the dust to which the worker is exposed, multiplied by the percentage of free silica in the dust, should not exceed the index 5.

Mr. RHODES. Would you say that again, sir?

Mr. DOYLE. It is generally accepted that the concentration of the dust to which the worker is exposed, multiplied by the percentage of free silica in the dust, should not exceed index 5.

On this basis, many of the States have adopted 5 million particles per cubic foot of air as the maximum allowable concentration for an 8-hour daily exposure to silica dust. Mixed dusts have been classified as low, medium, and high silica, with maximum permissible concentrations of 50 million, 20 million, and 5 million particles per cubic foot of air, respectively.

From pathologic data it has been established that only those particles between the size of 0.5 and 10 microns are retained by the lungs. Thus, to produce silicosis the airborne dust must be in this size range. However, there is a feeling in some scientific circles that dust particles below the 0.5-micron size may have pathologic significance.

The duration of the exposure is also an important factor. Numerous studies have shown that the disease appears rapidly in workers exposed to very high concentrations of dust. In those exposed to lower concentrations the disease becomes manifest only after a period of many years. There are cases on record in which the disease developed in less than 5 years and others in which it required as long as 50 years of exposure before the disease became evident.

As a result of field surveys, clinical investigations, and animal experimentation, it is known that silicosis increases susceptibility to tuberculosis. This infection may appear at any stage of the silicotic process. In fact, active tuberculosis is one of the most serious complications of silicosis, 40 to 70 percent of all fatal cases having been reported with the infection present. Furthermore, on first examination the entire clinical and X-ray picture is often that of extensive tuberculosis. Although the tuberculosis may develop as a result of reactivation of a preexisting latent tuberculous lesion, it is believed that initial infections are more common.

Because of the need to concentrate on other occupational diseases, 135 saw a diminishing emphasis by the Public Health Service on the epidemiology of silicosis. This decision was undoubtedly influenced by the assumption that the fundamental research on silicosis had been largely completed and that prevention was simply a matter of applying the developed environmental and medical controls. The middle 1930's also marked the introduction of extensive dust-control programs by the larger mining and industrial companies.

Within recent years the Public Health Service has undertaken three technical studies which relate to silicosis and health problems in mining operations. The first was a study in 1949 of silicosis in the foundries of Illinois. Silicosis was found in 9.2 percent of the 1,937 men examined. The clinical and environmental findings revealed that the dust conditions in the foundry had improved in the past 10 to 20 years. In the opinion of the investigators, silicosis was due in great part to the higher dust concentrations which probably had existed 10 to 15 years previously. The conditions noted, however, generally left room for further improvement in the control of silica dust.

During 1954 a comprehensive clinical and environmental study of workers engaged in the mining and processing of diatomaceous earth in five plants located in the Western States was completed. X-ray examinations of 869 diatomite workers showed lung changes in 8.8 percent of the workers. The chest disease found in these workers was similar to but not identical with silicosis and has been referred to in the literature as diatomaceous earth pneumoconiosis. Here again it was shown that the group with the longest exposure had the highest incidence of lung changes.

The growing use of radioactive materials has spotlighted the Colorado Plateau as the atomic-fuel storehouse of the Nation. Because of the potential dangers faced by the men who mine and mill the uranium ore, this area has been the scene of extensive clinical and environmental studies by the Public Health Service over the past 6 years.

Although the uranium-mining experience in Europe cannot be considered a parallel situation, they reveal that a period of from 10 to 17 years may elapse before the appearance of symptoms of radiation injury. Because of the limited period of exposure, medical find-

ings to date on uranium miners on the Colorado Plateau may be considered inconclusive. The workers will be followed closely to detect any signs of injury to their health. Environmental studies have shown that the radioactive gases and dusts can be controlled to recommended limits in most mining and milling operations.

In 1956, a survey was also made of the Vermont granite cutting sheds. The granite sheds represented an ideal situation for restudy since the Vermont Department of Health, as an outgrowth of the 1924 Public Health Service study, has had the sheds under constant medical and engineering surveillance since 1937. Between the years 1937 and 1947 practically the entire Vermont granite cutting industry adopted dust-control measures. The 1956 study indicated that few exposures exceeded 5 million particles per cubic foot of air. The Vermont Department of Health has also provided annual X-ray examinations of the workers since 1937. Although 535 cases of silicosis were uncovered among the 2,246 workers who have had 1 or more X-ray examinations during 1950–55, it is interesting to note that within the limitations of the X-ray equipment used, no silicosis has been diagnosed in granite shed workers whose initial exposure followed the installation of dust controls. Thus it appears that silicosis is under control in this industry. However, since the concentration of the dust and the duration of exposure are factors in the development of the disease, another decade of experience is required before it can be said that the disease has been completely eliminated in the industry.

The 20 years that have elapsed since the large-scale institution of dust-control measures by the mining and dusty trades industries may be regarded as a period of observation for determining whether these accepted preventive techniques are in reality adequate. With this concept the Public Health Service in 1956 undertook a study of the prevalence of silicosis on a nationwide basis.

Covering the 5-year period 1950–54, the study found 10,362 cases of silicosis that have been compensated or reported in one form or another in 22 States. These States were selected because of the availability of information and because it was known that silicosis is or had been a problem there. If cases processed by compensation agencies but for various reasons denied benefits are added, the total exceeds 13,000.

Mr. Chairman, this also is illustrated on a chart. I should like to take the time to show you the States. This, incidentally, is reproduced on page 2 of the "Significant facts." These are the 22 States that are shaded in which we received the information. Those States reporting less than 100 cases are in the crosshatched area. That is 100 cases over the 5-year period. Those States which are dotted had from 100 to 499 cases, and the dark States reported over 500 cases. Those States marked with a star, for them the information was obtained from the workmen's compensation commission. Those States not marked with a star, such as Oklahoma and Missouri, were obtained mostly from physicians' reports to the State health departments.

(Chart referred to, States Participating in Silicosis Prevalence Study, 1950–54, follows:)

STATES PARTICIPATING IN SILICOSIS PREVALENCE STUDY
1950 – 1954
VT. 354
CT. 167
N.J. 333
N.Y. 681
PA. 2153
W.VA. 201
OHIO 879
MICH. 722
IND. 65
ILL. 283
MO. 507
N.C. 162
ALA. 706
OKLA. 318
MINN. 37
MONT. 588
COLO. 66
N.MEX. 45
UTAH 40
IDAHO 81
ARIZ. 39
CALIF. 111
UNDER 100 CASES
100 - 499 CASES
500 CASES & OVER
COMPENSATION DATA

Mr. ELLIOTT. Mr. Doyle, let me ask you this question. For Alabama, you have listed 706 cases for this period 1950–54. My understanding is that that number comes from the data to be found in the records of the State workmen's compensation commission?

Mr. DOYLE. That is correct, sir.

Mr. ELLIOTT. But in another State, Oklahoma, you came up with a figure of 318 by examining records of physicians. What do you think might have been the result in Alabama if you had examined the reports of physicians in addition to the information that you got from the State workmen's compensation records?

I ask that question with the thought in mind that probably there developed a great many cases that never found their way into the State workmen's compensation records.

Mr. DOYLE. I think this would be true in most all of these States, that the figures we have do not represent a total of the number of cases, but we had to use one avenue or the other. In the case where there were, in our opinion, adequate workmen's compensation reports, or the information was available to us, this was the avenue we used. In the State of Oklahoma, we were not able to get that information, so we had to use the reports of private physicians, which are generally made to the State health department. What would have been the situation in Alabama had we used private physicians' reports, rather than workmen's compensation reports, I don't know, but I do think we would have received as many reports through that channel as we did through the workmen's compensation channel.

Mr. ELLIOTT. At the same time, though, I think it would be fair to say that the 2 figures, Alabama 706 and Oklahoma 318, are not comparable figures.

Mr. DOYLE. They are not comparable figures for this reason, that silicosis and pneumoconiosis have only recently become compensable in the State of Alabama. So this only represented a background of cases which have just come in because of the new compensation law. If this law had been in effect over a period of years, I feel that this would have been a smaller figure.

Mr. RHODES. Am I to understand that these figures represent persons suffering from diseases which are compensable?

Mr. DOYLE. Only silicosis in this case, sir.

Mr. RHODES. Suppose silicosis is not compensable. Then you have had to get the figures from physicians, I suppose, or some other source?

Mr. DOYLE. That is correct.

Mr. METCALF. I know you are going to discuss in this pamphlet you submitted the reason for Montana's 588 figure, but I wish that you would also put that in the record at this point, where you got that figure of 588 for Montana, and the reason for that relatively high figure.

Mr. DOYLE. Montana does not compensate for silicosis through workmen's compensation methods. They compensate through the welfare division of the State. These figures came from the welfare division. A worker totally disabled with silicosis is entitled to a certain amount of money each month.

Mr. METCALF. And this figure of 588 represents the men who are in the third stage of silicosis receiving welfare payments from the State public welfare agencies?

Mr. DOYLE. That is right. Instead of saying the third stage, I think they say totally disabled.

Mr. METCALF. Yes; totally disabled. Then in an adjoining State, in Idaho, the figure is 81. That figure is from the workmen's compensation records.

Mr. DOYLE. Yes, sir; there is a reason for this figure in Idaho. That is that the workmen's compensation in that State is handled by private insurance carriers or by the company itself. Unless a case of silicosis is contested, then the workmen's compensation division never received a report of it. So this represents, really, only 81 cases which were contested in the State of Idaho during that 5-year period, but does not represent the total number of cases that were probably available.

Mr. METCALF. Is there any way to determine what the total number of cases in Idaho would have been?

Mr. DOYLE. No, sir; unless we do get that information from the insurance companies, and they have been reluctant to give us this type of information in the past.

Mr. GRAHAM. There is no way to determine the total in Montana, either, is there?

Mr. DOYLE. Except through the welfare department.

Mr. GRAHAM. I mean the total number of cases.

Mr. DOYLE. No, sir.

Mr. ELLIOTT. And, therefore, the figure for Montana, again, would not be comparable to the figure for Alabama, because, presumably, some of these Alabama cases were for silicosis that was less than permanently and totally disabling. Would that be a fair statement?

Mr. DOYLE. No, sir. We only accepted as a part of our record those cases which had definitely been diagnosed by a physician or a panel as silicosis, or pneumoconiosis. That does not mean that all of these 706 cases were compensated, but they have been diagnosed, and perhaps are presently in the process of litigation.

Mr. ELLIOTT. Again, though, it seems to me that your 588 cases in Montana are cases where the disability is complete.

Mr. DOYLE. Yes, sir.

Mr. ELLIOTT. Whereas the 706 or part of the 706 in Alabama might represent cases where the disability is not complete.

Mr. DOYLE. Unless Alabama has a partial-disability law, which I am not familiar with. If it has a partial-disability law, then this would include people who were not totally disabled.

Mr. ELLIOTT. And whereas the Montana cases are totally disabled cases?

Mr. DOYLE. Yes, sir.

Mr. METCALF. Utah has a figure of 40. Again, is that only those cases that were contested?

Mr. DOYLE. No, sir. These were the total number of cases during that 5-year period, which were diagnosed on the part of the silicosis panel of the Utah Industrial Commission.

Mr. METCALF. So the figure of 40 in Utah against 81 in Idaho, they do not bear any relationship to each other?

Mr. DOYLE. No, sir; because the methods are entirely different.

Mr. RHODES. What about Arizona?

Mr. DOYLE. This came from the workmen's compensation division.

Mr. RHODES. And these are cases now being compensated?

Mr. DOYLE. Yes, sir.

Mr. METCALF. In Arizona, are there also private insurance carriers?

Mr. RHODES. A few. Practically all of the compensation is carried by the industrial commission.

Mr. DOYLE. I think in Arizona, every case has to be reported to the industrial commission, but in Idaho that is not true. You see, one runs into a great deal of difficulty when you try to compare one State with the other, because the types of reports received by each State are different. So it is impossible to compare the situation in one State against the situation in another State.

Mr. RHODES. Medically speaking, can you tell me why Arizona would have 59 as against Montana's 588, when the number of people employed are approximately the same?

Mr. DOYLE. No, sir; I can't tell you that.

Mr. METCALF. Would the type of mining make a difference, the fact that Arizona has large open-pit mines and Montana does not?

Mr. DOYLE. That would be partially true, yes. As a general rule, we don't get the same degree of dust exposure in an open mine as you do in an underground mine. That may be one solution for it.

Mr. METCALF. We have the same type of mining in the Coeur d'Alene region of Idaho as they do in Montana.

Mr. DOYLE. Yes. To answer your question, again, the silica content of the rock in which they were mining, of course, would have a bearing on this, too.

Mr. ELLIOTT. Your study there did not get figures for any of the States that are in the unshaded or white portion, that which has been left blank?

Mr. DOYLE. That is right.

Mr. ELLIOTT. Did you attempt to get figures from those States?

Mr. DOYLE. On some of them we did and some we did not. For instance, in the State of Mississippi, we knew there were no silicosis problems there, and the same is true in Georgia and Florida.

Mr. ELLIOTT. Do you have any silicosis problem, Doctor, among farmers who work in the dust and who drive tractors?

Mr. DOYLE. There is no severe problem. Occasionally there is a case of silicosis reported in agricultural workers.

Mr. ELLIOTT. But the problem is not very severe.

Mr. DOYLE. The problem is not severe.

Mr. ELLIOTT. Do you have any reports from people engaged in quarrying of marble, for instance?

Mr. DOYLE. Yes, sir. Marble is not a silicosis producing dust.

Mr. ELLIOTT. Do you have cases from people engaged in the production or mining or producing of limestone?

Mr. DOYLE. I shall get into this a little bit later, but on table 1 is a breakdown of the various industries from which that came. That is not broken down into limestone, marble, and what have you, but just into the quarrying group. Again limestone is not a silicosis producing dust.

Dr. FLINN. I might say that the limestone industry largely has been reported as a negative silicosis, because most limestone has no silica content. There has been one English case recently where they found a number of silicosis cases in limestone mining, but they found when they examined the dust that it was high in free silica, which is very unusual.

Mr. ELLIOTT. Have you had reports of any cases among workers in cotton gins?

Mr. DOYLE. No, sir. Again, cotton is a non-silicosis-producing item.

Mr. FJARE. What is the purpose of showing this map?

Mr. DOYLE. To give you an idea of States which participated in the survey and the number of cases reported from each State.

Mr. FJARE. It has no relationship to silicosis patients in one State as compared to another?

Mr. DOYLE. No, sir; except I told you that 10,362 cases were reported in this 5-year period, and these are the States from which they came.

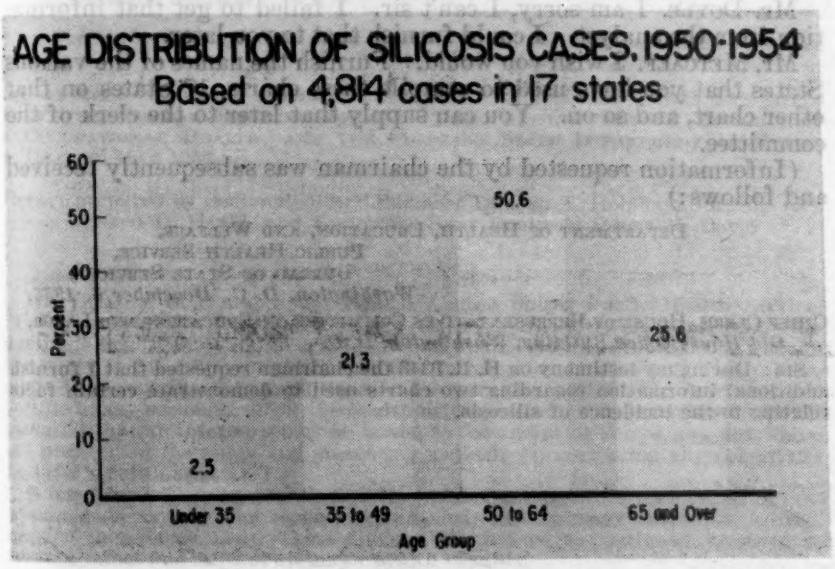
Mr. RHODES. Speaking of Arizona again, do you know whether a self-insurer under the workmen's compensation act has to report cases of silicosis?

Mr. DOYLE. No, sir; I don't know. Of the 10,362 silicotics recorded during this period, about 20 percent were dead; 50 percent were totally disabled; and 30 percent were still working, seeking work, or of an unknown status.

Because of the difficulties surrounding the gathering of these data and because of the limitations inherent in the records themselves, we have good cause to believe that the 10,362 cases are an underestimates of the actual situation. For one thing, according to records in vital statistics, there were more than 10,000 deaths from occupational chest diseases during 1950–54 in the United States.

Again, I have this illustrated and we think it is quite important. This was an analysis of 4,814 cases from 17 States which had age data, and on which we could analyze them; 2.5 percent of the cases reported were under 35 years of age; 21.3 percent were in the age range 35 to 49; 50.6 percent in 50 to 64, and 25.6 percent in the age group of 65 and over.

(Chart referred to, Age Distribution of Silicosis Cases, 1950–54, Based on 4,814 Cases in 17 States, follows:)



This finding, again within limitations imposed by the data, supports the current opinion that many of the cases of silicosis now coming to light represent a residue of old cases. However, these data also show that the silicosis is occurring among young men with recent exposures.

An attempt was made to determine the industry in which the silicotic was employed at the time the case was reported. Since 2 States did not have this information this is an analysis of 10,152 cases from 20 States. This is a numerical distribution of the cases according to industry and does not relate the cases to the population at risk. Therefore, the data cannot be used to compare the silicosis hazards between the various industries.

The mining industries produced 6,755, or two-thirds of these cases. Coal mining, including both soft and hard, ranked highest with 4,079 cases; metal mining followed with 1,637 cases. There were 854 cases for which the type of mining was mixed or was not specified. Another 185 cases were associated with the extraction and milling of nonmetallic minerals such as clay, feldspar, and mica, and in tunneling and quarrying operations.

From these facts it can be seen that silicosis is still associated with a wide variety of industries. If the occurrence of silicosis among young men can be regarded as a criterion, no industry can take credit for complete dust control.

To determine more precisely whether a significant number of new cases are developing among workers entering dusty trades for the first time in the past 20 years, an analysis was made of 3,455 cases in 10 States for which reasonably adequate employment histories were obtained. Of this number, 344 workers, or 10 percent, allegedly received their entire dust exposure after 1935, or sometime during the past 20 years.

Mr. METCALF. Would you tell us what those 10 States were?

Mr. DOYLE. I am sorry, I can't sir. I failed to get that information from the analyst. I could furnish that to you later.

Mr. METCALF. I wish you would. Furnish the names of the various States that you have used to compile these charts, 17 States on that other chart, and so on. You can supply that later to the clerk of the committee.

(Information requested by the chairman was subsequently received and follows:)

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
BUREAU OF STATE SERVICES,
Washington, D. C., December 6, 1955.

CHIEF CLERK, HOUSE OF REPRESENTATIVES COMMITTEE ON EDUCATION AND LABOR,
Old House Office Building, Washington, D. C.

SIR: During my testimony on H. R. 9343 the chairman requested that I furnish additional information regarding two charts used to demonstrate certain facts relating to the incidence of silicosis.

On a chart indicating the age distribution of 4,814 cases in 17 States, the information is based on the following:

	Number of cases		Number of cases
California	111	New Mexico	35
Colorado (out of a total of 66 cases)	30	North Carolina	162
Connecticut	167	Ohio (out of 879 cases)	637
Idaho	81	Oklahoma	318
Illinois	283	Utah	40
Michigan	722	Vermont (out of 354 cases)	82
Minnesota	37	West Virginia (out of 2,015 cases)	741
Missouri	507		
Montana	588	Total	4,814
New Jersey (out of 333 cases)	273		

The 10 States used in determining the proportion of cases receiving dust exposure before and after 1935 are:

	Number of cases		Number of cases
California	111	Utah	40
Connecticut	167	North Carolina	162
Michigan	722	Vermont (out of 354 cases)	338
Missouri	507	West Virginia (out of 2,015 cases)	741
Colorado (out of a total of 66 cases)	30		
Ohio (out of 879 cases)	637	Total	3,455

During the course of the hearings several references were made to the study of radon and its disintegration products in the uranium mines being carried out by the Public Health Service on the Colorado Plateau. For your information I am enclosing an interim report of a health study of the uranium mines and mills. A final report, entitled "Control of Radon and Daughters in Uranium Mines and Calculations on Biologic Effects," Public Health Service Publication No. 494, is now in press. A copy of this bulletin will be sent to the committee for its file when it is received.

Sincerely yours,

HENRY N. DOYLE,
Assistant Chief, Occupational Health Program, Division of Special Health Services.

[The Federal Security Agency on April 11, 1953, became the U. S. Department of Health, Education, and Welfare]

AN INTERIM REPORT OF A HEALTH STUDY OF THE URANIUM MINES AND MILLS BY THE FEDERAL SECURITY AGENCY, PUBLIC HEALTH SERVICE, DIVISION OF OCCUPATIONAL HEALTH, AND THE COLORADO STATE DEPARTMENT OF PUBLIC HEALTH, MAY 1952

Report prepared by Senior Sanitary Engineer Duncan A. Holaday, Surgeon (R) Wilfred D. David, and Senior Sanitary Engineer Henry N. Doyle

FOREWORD

The Division of Occupational Health, United States Public Health Service, in conjunction with the Colorado Department of Public Health, has been conducting a health study in the uranium mines and mills since July 1950. Although the study is far from complete, sufficient information has been derived to conclude that certain acute conditions are present in the industry which, if not rectified, may seriously affect the health of the worker. We therefore believe it essential that an interim report be issued to the operating companies, describing the progress of the study and presenting methods for correcting any potentially harmful conditions.

It has been gratifying to note that the operating companies, as a result of oral recommendations by our technical personnel, have already started to correct some of these conditions. These diligent efforts must be continued, however, to free the mines and mills of all major health hazards.

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I wish to take this opportunity to express my appreciation to the operating companies for their assistance and cooperation in the conduct of this study and to solicit their continued aid in future studies that must be made in order to successfully culminate this project.

SEWARD E. MILLER,
Medical Director, Chief, Division of Occupational Health, United States Public Health Service

I. INTRODUCTION

Btween 1881 and 1887, ores, later found to be radioactive, were discovered on the Colorado Plateau in the Rocky Mountain area of the United States. These were carnotite ores which contained vanadium and uranium, with a small quantity of radium. Several mines were developed during this period, but production was small as there was little or no demand for these materials. A small amount of ore was exported to Europe, and it is reported that the Curies used American carnotite ores in their early experiments.

In 1912, the United States Bureau of Mines surveyed the carnotite deposits of the Colorado Plateau and reported them as a practical source of uranium ore. The Bureau of Mines also made a study of methods for recovering radium, vanadium, and uranium from these ores and operated a pilot plant to demonstrate methods of production. From 1916 to 1923, the domestic production of radium from carnotite ores was significant. In 1923, however, when radium became available from high-grade Belgian Congo ores, the low grade American ores were no longer competitive. (1), (2), (3).

The development of atomic energy focused attention and interest on the carnotite deposits of Colorado and Utah. During the life of the Manhattan project, many of the old tailing dumps were reworked for their uranium content. Beginning about 1946, the discovery of many new ore bodies in the Colorado Plateau caused the industry to mushroom in this area. At the present time, there are an undetermined number of mines mining uranium ores of various types on the Colorado Plateau. These ores are the carnotites, which have been recognized for many years, rescoelite, autunite, uranite, and torbernite. The State of Colorado presently has the greatest production of uranium ores, with sizable quantities also mined in Utah, New Mexico, and Arizona. New discoveries, as yet undeveloped, have been reported in Montana and Wyoming. There are eight mills engaged in the processing of the uranium ores, which produce as their final products uranium oxide and vanadic acid. The uranium oxide is shipped to other establishments controlled by the Atomic Energy Commission for refining and subsequent separation of the isotopes.

In August 1949, when the industry had reached a sizable production rate in the State of Colorado, Dr. Roy L. Cleere, executive secretary, Colorado Department of Health, appointed an advisory board to advise him and the State division of industrial hygiene on the procedures to be used in conducting studies and surveys in this industry. Among the conclusions drawn at the first meeting of this group were that little or nothing was known of the health hazards of the uranium producing industry, and that a medical reconnaissance survey should be made by a physician from the Division of Industrial Hygiene[1] of the United States Public Health Service.

Such a reconnaissance survey was made shortly after this meeting. On August 25, 1949, Dr. Cleere called a second meeting of the Advisory Committee, at which was also represented the management of the larger companies mining and producing uranium in the State of Colorado. This group concluded that, in view of the dearth of available information on the health hazards associated with this industry, the Division of Industrial Hygiene of the United States Public Health Service should be requested to conduct a study of the uranium mines and mills. Accordingly, on August 30, 1949, a formal request for such a study was made to the Surgeon General by the Colorado Department of Health, the Colorado Bureau of Mines, the Colorado Industrial Commission, and several companies engaged in uranium mining and production. Shortly thereafter, the Chief of the Division of Industrial Hygiene, United States Public Health Service, replied to these agencies, expressing the desire and willingness of the Division to conduct a study of this type.

[1] Now known as the Division of Occupational Health.

While these negotiations were underway, the Industrial Hygiene Field Station[2] of the Public Health Service conducted a very limited study of the mining problems in the mines located on the Navaho Indian Reservation. The preliminary information obtained in this brief study indicated that the miners were exposed to external radiation, radon gas, and a high silica dust containing an undetermined amount of radioactivity. In addition, it appeared that the uranium and vanadium contained in the dust were of toxicologic importance and also that the matter of internal radiation due to the inhalation of radioactive dust should be considered.

Shortly thereafter, a preliminary survey was made of a mill producing uranium oxide and vanadic acid. The findings revealed that the mill workers were exposed to uranium- and vanadium-containing dust and to fume and dust of the isolated uranium and vanadium. It was determined that radon was of little significance in the mills because of the large area available for dilution of the gas; that external radiation was not an apparent problem; but that it would be necessary to consider the internal radiation factor, since dust control in the mills was not too effective.

With this background of information, it was concluded that the health study should consist of two essential and correlated phases: a medical investigation and an environmental investigation. Approximately 700 workers were given medical examinations in the first phase of the study, extending from July to October 1950. During the 1951 season, approximately 460 men were examined, of whom 260 were miners and 200 were mill workers. During the 2 seasons, physical examinations have been performed on 1,117 persons. This is the maximum number of men that could be readily examined at this time, for the remaining persons are employed at locations so remote that it would be impracticable for a medical team to get to them. However, it is believed that this coverage represents a large-enough segment of the working population to permit the drawing of valid conclusions. Since the mines and mills are frequently located at extremely remote locations, it has been necessary to confine the study to the summer and early fall months in order to avoid adverse weather conditions.

The medical study consisted of a detailed physical examination, a chest X-ray, and clinical studies of the blood and urine. The environmental phase included the determination of the nature and concentrations of the materials to which the workers were exposed. Through a correlation of these data, it was hoped that information could be obtained on the health hazards associated with the industry so that necessary control procedures could be instituted.

Environmental studies have been made in 6 mills and approximately 50 mines. These studies consisted of an evaluation of the dust problem, especially with relation to the silica content of the dust; a determination of the nature and extent of exposure to toxic materials such as uranium, vanadium, and other mineral constituents of the ore; and an evaluation of the radon concentrations in the mines.

Acknowledgments

In order to conduct this study, the Division of Occupational Health, United States Public Health Service, has cooperated very closely with the Atomic Energy Commission, especially the Division of Biology and Medicine and the Health and Safety Division of the New York Operations Office. The various State health departments concerned, i. e., Colorado, Utah, New Mexico, Arizona, have been advised of the progress of this study and in many cases have given us valuable cooperation. Assistance has been provided by the United States Bureau of Mines, and certain analytical work has been performed by the Los Alamos Scientific Laboratory, the Navy Radiological Defense Laboratory, and the United States Bureau of Standards.

Particular acknowledgment is made of the assistance which the Colorado Department of Public Health has given in the conduct of this study. The contribution of the National Cancer Institute through specialized consultation, as well as grants to the Colorado Department of Public Health, is also gratefully acknowledged.

II. EXPERIENCE IN EUROPEAN MINES

In the mines of the Erz Mountains, on both the Bohemian and Saxon sides, it has been known for centuries that the miners die in the prime of life with symp-

[2] Now known as the Field Station, Division of Occupational Health.

toms of damaged lungs and rapidly progressing ill health. These conditions, especially well known at the Schneeberg mines in Saxony, have been mentioned or described by many writers, including Agricola in 1500, Matthesius in 1559, and Pansa in 1814. It was not until 1879, however, that certain European investigators, through clinical and anatomical research, proved the affliction to be a malignant tumor of the lungs.

On the Bohemian side of the Erz Mountains in Czechoslovakia, about 30 kilometers south and east of Schneeberg, is Jachymov. This small mining town of about 8,000 inhabitants has been world famous as a source of radium from the beginning of the present century, but the history of the mines dates from the 1500's. Early in 1516, rich veins of silver were found in the Jachymov area. Exploitation was then begun but owing to the wasteful methods of mining at that time, the veins were almost exhausted by the end of the 16th century. Later, these mines were exploited for cobalt, nickel, bismuth, and arsenic. In the second half of the 19th century the exploitation began of uranium ore, found chiefly in the form of pitchblende. After Madame Curie's discovery of radium, the pitchblende in the Jachymov mines was processed for radium.

In Jachymov, as in Schneeberg, there has been a high mortality among the miners from pulmonary diseases, notably lung cancer. The similarity between the diseases developed by the miners in these two mining areas was not definitely established until about 1926. Environmental studies have shown that both mines have rather high concentrations of radon because of the presence of radioactive ores.

The causative agent for the lung cancers in these two mining areas has been controversial for a number of years. The etiological agent has been variously attributed to be cobalt, nickel, or arsenic. Others have expressed the view that radon and its decay products are responsible for the cancer of the lungs. It is probable, however, that no single agent can be blamed for this high incidence but a number of combined effects of environmental factors which are difficult to evaluate.

Information available in the medical literature of this country indicates there was an attack rate of about 1 percent per year of lung carcinoma among the miners working in these mines. It is also reported that 50 to 70 percent of all the deaths of the workers in these mines were due to a primary cancer of the respiratory system. This information was the only material available which indicated the health hazards associated with uranium mining. (4), (5), (6) It must be pointed out, however, that this disease usually has developed only after an average exposure of 17 years. Moreover, in any attempt to use these findings as a guide, cognizance must be taken of the fact that, in contrast to European practices, American operations are more intermittent. According to the Atomic Energy Commission, generally only one shift is employed, and the mines are not worked on a round-the-clock basis. Consequently, workers are not exposed immediately following the blasting, when dust and radon concentrations are generally highest.

As chronic irradiation per se represents a health hazard regardless of whether or not it induces cancer, all necessary steps have to be taken to reduce this hazard to a practical minimum, since the radon concentrations found in unventilated American mines are comparable to the concentrations found in the Schneeberg and Jachymov mines.

Sufficient information has been obtained in this study to indicate that radon and its decay products can be reduced to a minimum by the provision of adequate and effective ventilation.

III. RADON, ITS BIOLOGICAL AND PHYSICAL PROPERTIES

Uranium ores contain uranium plus all the other members of the radioactive family, of which uranium is the parent. Included in this list is radium, which is transformed into radon gas.

Radon is the heaviest gas known, being about seven times as dense as air. It it absolutely inert chemically and will react with no other material. As it is a gas, it will diffuse from the rocks or be released by drilling and blasting operations and will become dispersed throughout the atmosphere of the mine. It is radioactive and has a half life of about 4 days, which means that in this period of time one-half of the radon will transmute into other radioactive elements.

The radiation hazard involved in the mining of uranium ores comes from the radioactive gas, radon, and two of its most important daughters, RaA and RaC'. All of these elements emit alpha particles which are very energetic and will

damage body cells with which they interact. As radon is a gas, it is breathed in along with the air in the mine and while in the lungs will continue to decay, emitting alpha particles and producing RaA, RaB, RaC, and RaC'. The daughters of radon will also decay in the lungs, likewise emitting alpha particles besides gamma and zeta. Furthermore, some of the radon enters the blood stream. Potential hazard to the lung tissue arises mainly from the alphas from Rn, RaA, and RaC'.

Under usual mine conditions, large numbers of dust particles and water droplets are present in the atmosphere to which the solid decay products of radon will become attached. This dust will be inhaled and carried into the lungs where a portion of it will be retained and decay as outlined above, thus delivering additional radiation to the lungs. The amount of this dust-borne radioactivity that is present in mine atmospheres will depend on the ventilation, air turbulance, and probably other factors. Studies have shown that where ventilation is provided that ratio of radon decay products to radon may be as low as 2 percent of the theoretical value. The facts that the solid daughters of radon will become attached to dust and be inhaled and that the ratio of radon to its decay products is profoundly affected by ventilation are very important in assessing the potential hazard from these elements.

All of these hazards can be effectively reduced by the proper control measures, which are outlined in section V.

IV. SUMMARY OF MEDICAL FINDINGS

The medical and clinical laboratory examinations of workers in the uranium mining and milling industry in the Colorado Plateau were begun in the summer of 1950. At the present time, over 1,100 men have undergone physical examinations with emphasis upon occupational history, chest roentgenograms, urine analyses, and blood studies, which include erythrocyte counts, total and differential leukocyte counts, hemoglobin estimations, and hematocrit values. In addition, a selected group of approximately 200 miners and millers was examined for atypical blood forms by using a peroxidase staining technique on blood smears.

At this time, no clear-cut etiologic or pathologic patterns have been uncovered among the workers examined. Since the majority of the workers has been exposed for a period less than 3 years, this observation is not entirely surprising. It does, however, point to the need for repeating the medical studies at frequent intervals. At the present time, therefore, it is planned to reexamine these workers periodically, using the present medical findings as a base line.

In addition, it is felt that a great deal of valuable information could be obtained by an epidemiologic study of persons who were employed in the uranium mines and mills before 1950. At this time, we have not had opportunity to examine a sufficient number of former uranium miners to determine whether or not there has been an excess of lung cancer among them.

An epidemiologic investigator has been assigned to the project to obtain as much information as possible regarding the health status of those persons who were employed in the industry prior to 1950. He is accomplishing this task by obtaining information from such sources as the following: private physicians, referred persons, death certificates, hospital records, industrial commission records, and plant medical and personnel department records. When a relationship between illness and occupation is suspected, arrangements will be made for detailed clinical studies.

The data of the 1950–51 examinations made in the field have been tabulated. Some of the results are presented on the next page.

Duration of exposure

Among the total of 913 white miners and millers studied, the following percentage distribution of exposure durations was found to exist:

Exposure duration:	*Percent of total workers*
Less than 6 months	23.3
6 months to 1 year	14.4
1 to 3 years	31.4
3 to 5 years	12.4
5 to 10 years	12.7
10 years plus	5.8

Thus, approximately 30 percent of the workers selected have been exposed for a period of 3 or more years, but within the next 18 months this percentage

will rise to approximately 60 percent, provided the turnover of workers does not reach outstanding proportions.

Medical history

Analysis of the medical histories of these individuals showed a predominance of respiratory infections, including pneumonia and sinus nfection. There was a predominance of conjunctivitis at the time the physical examinations were performed.

Several cases of illness which were encountered among mill workers were attributed to long-term exposures to relatively low concentrations of vanadium compounds.

Dental findings

A number of workers in the vanadium-processing plant were observed to have a green coating of the tongue and teeth. Workers in the area of the uranium leaching process were observed to have a yellow coating of the tongue and teeth. The incidence of dental caries did not differ from that which is observed in the general area. The edentulous persons studied were slightly younger than those previously studied in other parts of the country.

Urine analyses

Urine analyses have failed to show any significant clinical findings.

Blood studies

In 1950, approximately 646 determinations were completed on all of the workers examined. In 1951, all of the workers received the same examination with the exception that erythrocyte counts were done on 1 out of every 4 persons. Analysis of the blood findings shows no significant abnormalities as far as the red cell count, leukocyte counts, hemoglobin determination, and hematocrit are concerned.

Lungs

In 1950, 13.8 percent of the white miners and 26.5 percent of the white millers showed more than usual pulmonary fibrosis, as compared to 7.5 percent in a control group. In the same year, 20 percent of the Indian millers and 13.2 percent of the Indian miners showed more than usual pulmonary fibrosis, as against none in the controls. Such a finding would indicate a tendency on the part of these individuals to develop silicosis from their exposure. These figures do not infer that the pulmonary fibrosis is occurring because of contact with uranium. It is much more plausible that past exposures to hard-rock mining, as well as possible current exposures, are the real cause of this fibrosis. The statement "more than usual pulmonary fibrosis" does not always mean silicosis, but could be one of the early signs of silicosis. Approximately 10 cases of definite silicosis have already been determined among the examined workers in 1951.

V. SUMMARY OF ENVIRONMENTAL FINDINGS

During the 1950 and 1951 seasons, 50 mines and 8 sampling and processing mills were thoroughly studied in order to determine the toxic materials present and the degree of the workers' exposures. Obviously, individual plant findings cannot be reported in this communication, but the discussion contained herein is, in general, applicable to all milling or mining properties. The investigators have attempted to apprise each company of findings pertaining to its properties.

Mines

Radon and its decay products.—Analysis of a statistically valid number of samples for radon and its short-lived daughters has indicated that the concentration of theses radioactive substances has been too high for safe operation over an extended period, except in those locations where adequate ventilation is provided. The median level of radon concentrations in the mines of the Colorado Plateau is above the median levels reported in the European mines, where a high incidence of illness was found in the workers. It must be emphasized again, however, that strict comparison cannot be made between the American and European situations.

A value of 100 micromicrocuries of RaA and RaC' per liter of air [8] was derived after due consideration of expert opinion and by interpolation of data from other radioactive doses known to produce biological damage. It is believed that

[8] 3.7×10^{10} atomic disintegrations/second = 1 curie.

the factor of safety in this value of 100 micromicrocuries, as measured by a method to be presented in section VI, is sufficiently great to prevent damage to the lung tissue in the normal healthy worker. Experiments conducted by this division indicate that the mines should have no difficulty in reducing the concentration of RaA and RaC′ in the mine environment to this suggested value by accepted mine ventilation methods. This value is being offered as an operating standard until such time as a level for total alpha radiation is established by the National Committee on Radiaiton Protection.

It must be expressly understood that the value of 100 $\mu\mu c/1$ [4] is being suggested without sufficient knowledge on which to base a scientific value and that the Division of Occupational Health reserves the right to reinterpret this value as scientific information is accumulated and when a value is announced by the National Committee on Radiation Protection. Prior studies of environmental hazards in other industries have not had occasion to develop maximum allowable concentration values for RaA and RaC′. The uranium mining and milling industry is the first one in this country in which large numbers of people have been exposed to this contaminant under such conditions that it could not be readily controlled.

The Division of Occupational Health and the Atomic Energy Commission are presently engaged in the initial phase of an experimental mine ventilation project. When this project is completed, a report of the findings will be issued to the operating companies. Pending the completion of this investigation, the mining companies are urged to immediately install ventilation systems according to standard practices, incorporating the suggestions contained in section VI of this report.

Dust control is also of great importance in the suppression of RaA and RaC′, as the dust particle is a means of attaching the radioactive nuclei to large particles in the atmosphere. Continued emphasis should be placed on wet drilling and the wetting of muck piles. Experiments are in order to determine the effectiveness of wetting agents in the suppression of dust. However, the operators are warned against the use of mine water for wet-drilling purposes. It has been found that some mine waters are very high in dissolved radon and that their use constitutes another source of radon in the working atmosphere.

Silica dust.—Most of the uranium encountered in this study has been found in high free silica ore bodies. The free silica content of rafter dust and ore samples has ranged from 40 to 70 percent. Consequently, the development of silicosis by the miner is a possibility unless adequate dust-control measures are used. Several cases of silicosis were detected in the medical study, but all cases had a previous occupational history in hard-rock mining. Dust control in the mines has been fairly good, due to the widespread use of wet drilling and because many of the mines are so-called wet mines. Dust concentrations have ranged from 5 to 20 m. p. p. c. f. (million particles per cubic foot). It is believed that, in view of our present knowledge regarding the development of pneumoconiosis, the silicosis problem in the mines is not acute. The aforementioned range is within the legal limits of most of the States concerned. However, the importance of reducing dust concentrations to a minimum as an adjunct to controlling airborne radioactive materials is again emphasized. Those companies making their own dust counts may experience some difficulty in counting when standard techniques are used. The settling characteristics of the dust are markedly different from those of ordinary mine dust, possibly because of electrostatic charges on the dust particle. Additional information on this subject may be obtained from the Salt Lake City office by persons interested in dust evaluation.

External gamma radiation.—The matter of external radiation received by the miners has been given serious consideration by the study team. Measurements of gamma radiation have been made, using survey meters for area monitoring and pencil dosimeters for personnel monitoring. The results, however, have been erratic. The meaning of the values obtained is obscure, because a number of problems exists in the mines which interfere with radiation measurement. For example, radioactive dust will deposit on any surface and thus concentrate on survey meters and dosimeters. As a result, the instrument readings are primarily functions of the surface of the instrument and the concentration of radioactive dust and not a function of the gamma field produced by the ore bodies. Radioactive dust is also concentrated on the workers' clothes and thus increases the workers' total apparent radiation dose. The problem of measuring external

[4] Micromicrocuries/liter of air.

radiation requires considerable study, but this inquiry has been deferred until other more acute problems have been solved. It is strongly recommended that the workers take daily baths (preferably showers) using soap freely, and that a frequent change of work clothing is desirable to minimize skin contact with the radioactive dust.

Internal radiation and chronic metal poisoning.—The levels of atmospheric uranium and vanadium found in the mine atmosphere do not appear to be sufficiently high to produce chronic uranium or vanadium poisoning. Urine samples were taken from all miners examined. The urinary uranium and vanadium levels were of a low order of magnitude.

Internal radiation resulting from the inhalation and absorption of radioactive compounds has been recognized as a potential health hazard because some of the members of the uranium series are bone seekers. This hazard has not been evaluated in the present situation but an investigation is planned. Dust control and ventilation will reduce any possible hazard connected with internal radiation, as well as hazards from chronic metal poisoning.

Mills

Since the process for the separation and isolation of uranium and vanadium is defferent in each mill, it is impossible to generalize the findings in this report, as was done with the mines, except in a few operations which are common to all plants. In general, it may be said that there are no health hazards in the mills which cannot be controlled by accepted industrial hygiene methods.

Radon and its short-lived decay products are not usual problems in the milling plant, due to the large volume available for dilution and the open-type construction which is, in general, used throughout the industry.

Dust control at the crushing operation has been found to range from fair to poor. The control of dust at this operation can be accomplished by standard engineering methods, but the installation should be designed by competent and skilled persons. Standards set by the State for silicosis control, using the ore of highest free silica content (70 percent), should be used as a guide in determining the effectiveness of dust control systems. This value (5–20 m. p. p. c. f.) should also control other health hazards associated with the dust. Since the radon has not been confined at this operation, the decay products have not had the opportunity to grow into equilibrium. Until adequate dust control has been established at this operation, the workers should be required to wear approved dust respirators. Daily baths and frequent changes of clothing by the workers in this area are also indicated.

Relatively high concentrations of uranium and vanadium fume were found around the fusion furnaces. In practically all plants the workers in this area were found to be suffering from a chronic irritation of the upper respiratory tract, apparently resulting from exposure to vanadium fume. It was also in this area that the green throats referred to in the medical summary were found. Several cases of a transitory illness were observed by the physicians among workers welding or cutting vanadium-coated pipes and metals.

Since the fusion operation is different in each plant, it is impossible to make specific recommendations applicable to each establishment. In general, it may be said that all fusion furnaces should be constructed so as to prevent fume leakage. Local exhaust ventilation should be provided at the transfer point (from furnace to casting wheel) and at the bagging operation. The workers should be provided with fume respirators for emergency and temporary exposures to vanadium and uranium fumes.

Portable exhaust blowers should be located in the fusion area and used by maintenance workers whenever it is necessary to cut or weld metal coated with uranium or vanadium.

Good personal hygiene should be practiced by the workers in the fusion area. This should include daily baths and freshly laundered work clothes each day.

This report deals only with certain specific hazards in the mill. Exposures to other health hazards, such as acids, alkalies, certain gases, and other agents, were also noted, however. Each mill should therefore consider the advisability of a general industrial hygiene survey by the State industrial hygiene agency or other competent authority.

VI. DISCUSSION OF CONTROL MEASURES

Ventilation of uranium mines

The essential requisites for ventilation of uranium mines are the same as those in any siliceous ore mine. These requisites are: planned methods of mine ventilation to provide each workplace with an adequate amount of fresh air; wet drilling where practicable; the rapid removal of contaminated air from the workings; and commonsense dust control practices.

For operations in rock, emphasis is usually placed on wet drilling, copious use of water to spray down the surface of the workplace and muck pile during loading, and forced ventilation to the work face.

The basic health problem associated with uranium mining is not only to suppress the siliceous dusts but also to lower excessively high concentrations of radon and its short-lived daughters. Dust concentrations in these mines are of even greater physiological significance as compared to those in ordinary hard-rock mining, since the inspired dust is contaminated with radioactive meterials. From the viewpoint of silicosis production, the dust concentration in most uranium mines is within accepted limits. This fact may be explained by the lack of activity in the mines, as they are usually small and generally only one face is worked. Wet drilling is generally practiced, and the mines are usually abandoned overnight to allow powder smoke and dust to be cleared out.

During the course of this study, the ventilation systems of a number of mines have been investigated and, based upon this experience, certain modifications to standard ventilation practice are offered in this report. It is believed that compliance with standard practice and these modifications will result in the lowering of the concentration of RaA plus RaC′ to the recommended level of 100 micromicrocuries per liter in practically all mines.

In uranium mining, it appears more practicable to place the mine under positive pressure rather than under negative pressure. This would have several advantages, namely:

1. Churn drill holes from a point close to the breast of development drifts and stopes are becoming more in evidence in the uranium mines. With the mine under positive pressure, radon would be forced from the working area through churn drill holes without distribution throughout the mines.

2. Positive mine pressure would tend to hold the radon in worked-out areas or force it from the mine through surface openings.

3. Although quite theoretical, it may be that positive mine pressure may tend to hold the radon in the fissures and rock openings of newly developed areas. The radon would tend to diffuse out of these areas when the fan is shut off at night (if such be the case), but would subsequently be expelled from these areas 30 or 40 minutes after the ventilation system is turned on.

With regard to nonused workings, it is more desirable to close them off to reduce air contamination and ventilation requirements.

A number of experiments have been performed in uranium mines in order to show the effectiveness of ventilation, and several examples are presented:

1. This mine has two levels. The first level is reached by incline from the surface, and the two levels are connected by means of a second incline. At the time of the ventilation study of this mine, there was approximately 2,800 feet of 8-foot by 10-foot drift or tunnel. A 3,000-cubic-foot-per-minute fan forced air through a 10-inch churn drill hole to the lowest level. This air was exhausted to the upper level by way of the incline, providing an air velocity through the drift and incline of 37 linear feet per minute.

Approximately 7,000 cubic feet per minute of fresh air moved down the main incline to the upper level, mixed with the 300 cubic feet per minute rising from the lower level, and exhausted from the upper level through a 4-foot by 6-foot ventilation raise in which 10,000-cubic-foot-per-minute exhaust fan had been installed.

Samples of radon decay products were taken at the foot of each incline. Initial samples were taken when the fans had been inoperative for a period of 14–30 hours. The fans were then turned on and series samples taken over a

period of time to observe the effectiveness of ventilation in reducing the concentration of RaA and RaC'. The table below is a tabulation of these data:

Sample location	Radon decay products	Remarks
Foot No. 1 incline	7,860 μμc/l	Fans off 20 hours.
Do	4,720 μμc/l	Fans off 30 hours.[1]
Do	Less than 10	Fans off 4 hours.
Foot No. 2 incline	5,370 μμc/l	Fans off 20 hours.
Do	5,260 μμc/l	Fans off 30 hours.[1]
Do	Less than 10	Fans on 4 hours.

[1] This decrease was caused by the overnight inflow of cold outside air.

2. Another mine consisted of two separate workings in the same ore body. Both workings are reached by incline—incline No. 1 and incline No. 2. Incline No. 1 was provided only natural ventilation, and poor air movement was observed. Incline No. 2 was under positive pressure from a 2,000 cubic feet per minute fan which provided 3 to 6 air changes throughout the workings each hour. The concentration of RaA and RaC' in incline No. 1 was in the magnitude of 10,000 μμc/1, while the concentration in incline No. 2 was 160.

Other examples of ventilation practices are available, but it appears that these two examples serve to indicate what can be accomplished in the reduction of airborne radioactive materials by supplying even small amounts of air to the working area. Pending the completion of the demonstration mine ventilation project being carried on by the Public Health Service and the Atomic Energy Commission, the following general rules may be applied in establishing ventilation requirements for uranium mines:

1. Although each uranium mine will present a special problem in ventilation because of such factors as the grade of ore, amount of radon carried in by ground water, and exposed ore bodies, it is probable that 2,500 cubic feet per minute is a minimum amount of ventilation required for a small mine.

2. Each pair of men working in a raise, stope, or dead end drift should be supplied 1,000 cubic feet per minute or more from a tube outlet located within 30 feet of the breast.

3. A supply of not less than 2,000 cubic feet per minute of fresh air should be supplied to the breast of an 8-foot by 10-foot drift.

4. In drifts of large cross section, the quantity of air supply should be calculated to produce a velocity of air flow of not less than 30 linear feet per minute.

5. The ventilation system should be turned on at least 40 minutes before workers enter the mine.

6. Natural ventilation of uranium mines should be fully utilized but cannot be relied upon as a suitable means of removing contaminants from the working area.

Collection and measurement of radon decay products

The success of any control program for radon and its short-lived daughters will depend upon the ability of each mine to make its own measurements. Frequent measurements should be made in the haulageway and daily measurements at the working face. In view of the fact that many workers may spend most of their working lives in uranium mines, it is so important that the suggested level of 100 μμc/1 be maintained in the working environment that industry should not depend on infrequent visits from State or governmental agencies for control work. These agencies should be depended upon only for consultation visits and emergency work. It is noteworthy, also, that transport workers engaged in conveying both the ore from the mines and the more refined product from the mills are not subject to significant exposures.

With these facts in mind, a field method has been developed for the measurements of RaA and RaC', which is relatively simple and may be used by the mines for control work. This method consists essentially of the following steps:

1. Air is drawn through a 1-inch diameter circle of Whatman 41 filter paper contained in a special adapter [5] at a measured rate (14 to 23 liters per minute) by a hand-cranked pump [6] for either a 5- or 10-minute period. In order to simplify calculation, tables have been prepared for these two sampling intervals.

[5] Blueprint of adapter available on request to Salt Lake City office.
[6] The only known source of a satisfactory hand-operated pump is Mr. Lester Roberts, 316 Pennsylvania St., Denver, Colo.

2. The filter paper is then removed from the mine and the alpha activity on the paper is measured by a field instrument (the Juno[7] is a satisfactory instrument for this purpose.) This instrument needs to be calibrated against a laboratory counter so that the scale may be read in alpha disintegrations per minute (dpm). Companies purchasing the instrument should send it to the Salt Lake City office for calibration. The instrument will be returned with a chart converting scale reading to alpha disintegrations per minute, a radioactive standard to check the calibration of the instrument, and a correction curve. In order to prevent contamination, this instrument should never be taken into the mines.

3. The activity (dpm) obtained by reading the instrument must be converted to time zero, which is obtained from the correction curve (see sample calculation below). This value is substituted in one of the following equations:

$$\mu\mu c/1 \text{ of } RaA \text{ and } RaC' = \frac{0.12\,(dpm)}{V} \text{ for 5 minute sample}$$

$$\mu\mu c/1 \text{ of } RaA \text{ and } RaC' = \frac{0.066\,(dpm)}{V} \text{ for 10 minute sample}$$

Where dpm = alpha disintegrations per minute at time zero
V = sampling rate in liters /minute

The following is an example of the method:

A sample was taken from 10:03 to 10:13 at a sampling rate of 18.5 liters per minute. The filter paper was read in a Juno instrument at 10:45, giving a reading of 26 by 100. From the calibration chart, alpha disintegrations per minute equal 640,000. The correction factor (from a chart to be supplied with instrument calibration) for 32 minutes (10:45 to 10:13) is 1.8; so that the alpha activity at time zero (10:13) was 640,000 by 1.8 or 1,152,000. Substituting this value in the 10-minute formula above, we obtain $\frac{0.066 \times 1{,}152{,}000}{18.5} = 4100$ $\mu\mu c/1$ of radon decay products.

In order to assist the mining companies in instituting this method of measurement, technical consultation is available by request to the Salt Lake City office. Each set of equipment for these measurements will cost approximately $400.

ADDRESS OF SALT LAKE CITY OFFICE

Mail

Field Station, Division of Occupational Health, U. S. Public Health Service, Box 2537, Fort Douglas Station, Salt Lake City, Utah.

Express shipments

Field Station, Division of Occupational Health, U. S. Public Health Service, Building 503, University of Utah Annex, Salt Lake City, Utah.

VII. RECOMMENDATIONS

Mines

1. Adequate ventilation should be supplied to mines so that the concentration of RaA plus RaC' will not exceed 100$\mu\mu$c/1 at any work location.

2. Wet drilling, wetting of muck pile, and other dust suppressive measures should be practiced to reduce the atmospheric dust concentration to a minimum value.

3. Mine water should not be used for wet drilling purposes unless the water has been certified by a competent authority to be safe for this purpose.

4. Approved dust respirators should be worn by the mineworkers until satisfactory ventilation has been provided in the mine.

5. The workers should practice good personal hygiene, including daily showers and frequent change of work clothes. Eating and storage of food in the mine should not be permitted.

6. Preemployment and periodic medical examinations should be done on all workers. The medical studies should include detailed occupational and medical histories, thorough physical examinations (including skin examinations), laboratory anaylses of blood and urine, and chest X-rays. It would be desirable that the periodic examinations be performed annually on every worker.

[7] This instrument is available from Technical Associates, 3730 San Fernando Rd., Glendale, Calif. Catalog No. SRJ-1.

Mills

1. Effective dust-control systems should be applied to the crushing and screening operations.
2. Dust and fume control systems should be used in the fusion and bagging operations at all points where uranium and vanadium dust or fume are liberated.
3. Local exhaust ventilation should be available whenever objects coated with vanadium or uranium are welded or flame cut.
4. Fume or dust respirators should be available to all workers who are exposed to dust or fume until such time as the exposures are controlled by engineering methods. Respirators should be available at all times for emergency or temporary exposures.
5. Good personal hygiene should be practiced by all workers. Daily baths and daily change of work clothes are recommended for those persons employed in the crushing and screening, and the fusion and bagging operations. Separate lunchrooms away from contaminated areas should be provided and used by the workers. No food should be eaten or stored in the production area.
6. Preplacement and periodical medical examinations should be performed on all workers. The medical studies should include detailed occupational and medical histories; thorough physical examinations, including dermatological examination; laboratory analyses of blood and urine; and chest X-rays. It would be desirable that the periodic examinations be performed annually on every employee.

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Mr. DOYLE. Yes, sir. The distribution of the 2 groups with the largest proportion of cases receiving total dust exposure in the past 20 years were nonmetallic-mineral industries with 32 percent, and nonmetallic mining and quarrying with 21 percent. Cases were found with less than 5 years' exposure; but, in general, the exposure period averaged about 15 years.

Preliminary tabulation of data collected on 2,746 cases in 11 States for which tuberculosis was recorded when present, shows that 35 percent also had tuberculosis. It was diagnosed in 33 percent of the 1,763 persons who were alive at the time of the latest record; 49 percent of the 983 individuals who had died during the study period were found to have tuberculosis as well as silicosis.

An inescapable conclusion derived from our statistical study, limited though it may be, is that silicosis continues to be an occupational disease of considerable importance. From the standpoint of dust control, the silicosis problem appears to be more prevalent in those men that had their initial exposure before 1935. Enough evidence was uncovered to suggest that either the application of dust control measures is not universal or that other factors such as the adequacy of our present standards, the influence of the particle size and the actual toxicity of various forms of silica, are involved. This fact is evident since silicosis is developing among younger men with recent and short exposure to dust. In addition, we must consider that, with less

severe exposures, silicosis may take longer to develop than in the past, obviously a possibility that cannot be determined for some years.

On the basis of the research of the Public Health Service and other investigators, it is apparent that silicosis continues to be an occupational disease of significance. However, experience has shown that it is a preventable disease controllable by proper engineering and medical methods.

Although the principles developed through research appear to be sound and effective in the control and prevention of the disease, the application of dust-control methods in industry is far from universal. The furtherance of the application of such measures is primarily a function of the various State agencies responsible for administering health, labor, and mining laws.

There are, however, certain research needs in the broad area of the dust diseases. Especially paramount at this time is the need to determine the physiologic-pathologic effect of dust particles below 0.5 micron and to explore further the health effects of dust other than silica. Our recent inquiry into the prevalence of silicosis has also revealed the need for better reporting of diagnosed cases of silicosis, a uniform diagnostic terminology, establishment of disability criteria and standards for the supervised employment of nondisabled silicotics.

That, Mr. Chairman, completes my notes.

I shall be glad to answer any questions you or the committee may have.

Mr. METCALF. We are very glad to have your statement, Mr. Doyle. With your permission, the committee will now recess until 2 o'clock, at which time the members of the committee will continue with their interrogation of you and Dr. Flinn, if you will be back at that time.

The committee will be in recess until 2 o'clock.

(Thereupon at 12 noon, a recess was taken until 2 p. m., the same day.)

AFTER RECESS

Mr. METCALF. The subcommittee will be in order.

At the time the committee recessed, Mr. Doyle had just completed his testimony, and Dr. Flinn, have you some testimony to offer at this time?

STATEMENTS OF HENRY N. DOYLE, ASSISTANT CHIEF, OCCUPATIONAL HEALTH PROGRAM, PUBLIC HEALTH SERVICE, UNITED STATES DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE; AND DR. ROBERT E. FLINN, CHIEF, DIVISION OF HEALTH, BUREAU OF MINES, DEPARTMENT OF THE INTERIOR—Resumed

Dr. FLINN. Mr. Chairman, I have very little to add to the rather detailed presentation made by Mr. Doyle.

Mr. METCALF. We will be glad to hear any addition to the very eloquent presentation that he made.

Dr. FLINN. As he pointed out, the Bureau of Mines has been working in very close cooperation with the Public Health Service, since 1914, at least, and many of the studies he mentioned this morning were joint studies. I have a copy of our agreement between the two

agencies which may be of interest to the committee, showing how we tie our activities together.

Mr. METCALF. Without objection this will be made a part of the record at this point.

(The information referred to will be available for reference when furnished.)

Dr. FLINN. Both the Bureau of Mines and the Public Health Service have put out many, many reports on silicosis and related diseases. I have here a list of Bureau of Mines publications. One is a technical paper, No. 705, Bibliography of the Bureau of Mines Publications Dealing with Health and Safety in the Mineral and Allied Industries from 1910 to 1946, and Bibliography of Bureau of Mines Health and Safety Publications from January 1947 to June 1955.

Mr. METCALF. They will be received for the reference of the committee and placed in the files.

Dr. FLINN. I also have a rather comprehensive review on the literature on dust, and the diseases resulting therefrom. That is bulletin 478, published in 1950.

Mr. METCALF. Bulletin 478 of the Bureau of Mines, is that right?

Dr. FLINN. Yes; that is right.

Mr. METCALF. That, too, will be received for the file.

Dr. FLINN. Here is Information Circular 7556, Historical Résumé of Mine and Tunnel Ventilation Studies, Bureau of Mines, 1910 to 1949.

Another is Information Circular 8687, Silicosis as Affecting Workmen, Mining Workmen and Operations.

The Menace of Dust in Metal Mining, by Dan Harrington, published in March of 1937 in the Engineering and Mining Journal.

An older publication showing some of the early work done in this field, in the tri-State area of Oklahoma, Kansas, and Missouri, entitled "Silicosis and Tuberculosis Among Miners of the Tri-State District of Oklahoma, Kansas, and Missouri, Part II, for the Year Ending June 30, 1929, Technical Paper 552."

I think the record might also show, Mr. Chairman, that there have been at least two previous hearings on the problem of silicosis and mining and tunneling. One is hearings before a subcommittee of the Committee on Education and Labor of the United States Senate, 74th Congress, 2d session, Senate Concurrent Resolution 34, held on April 1 and 2, 1936.

I believe the committee is getting copies of that.

Mr. METCALF. We will leave the reference for the bibliography for general information and copies of those hearings will be obtained for our file.

Dr. FLINN. Another rather historical paper is Mining Consumption in the Mines of Butte, Mont., Technical Paper 260, published in 1921.

Mr. METCALF. Is that all that you have?

Dr. FLINN. I would like to call your attention to item 310 in that review of dust, which is the other House hearing held on silicosis, a very unusual silicosis problem at Gawley Bridge, W. Va. It is reference 310 in that gray document.

Mr. METCALF. That is bulletin 478, is that the one to which you have reference?

Dr. FLINN. Yes; that is right. I have marked reference 310 in that document for your information.

Mr. METCALF. You wanted to make a special reference to that, I understand.

Dr. FLINN. That is right.

Mr. METCALF. Now, before we go any further on the record here, the Menace of Dust in Metal Mining, by Mr. Harrington, which is an article in the Engineering and Mining Journal, is not so long but what I believe it can be incorporated in the record.

(The document is as follows:)

[Engineering and Mining Journal, March 1937]

THE MENACE OF DUST IN METAL MINING[1]

UNCERTAINTIES CONFRONT THE OPERATOR—PREVENTION SO FAR AS POSSIBLE THE SAFEST COURSE

D. Harrington, Chief, Health and Safety Branch, United States Bureau of Mines, Washington, D. C.

Unquestionably, dust prevention is the surest means that the metal-mining industry can adopt to avoid complications or damage of various kinds caused by the dust produced in its operations. This constitutes a menace that now badly threatens it, as well as those engaged in tunneling and quarrying and similar operations. The industry should take advantage of the methods that are available for reducing air dustiness in its mines and plants.

Vast amounts of information are available on the effect (respiratory and otherwise) of dust in mines and other industrial plants. Although these data are relatively definite as to some phases of dust occurrence, such as explosibility or nonexplosibility, tendency to fire spontaneously, and numerous other physical and chemical features, there are numerous uncertainties regarding the effect of dust on the human body, especially almost every phase of the effect of breathing airborne dust. A possible exception is that harm to health can be expected from prolonged breathing of excessive amounts of dust (or at least some dusts) over considerable more or less consecutive periods of time.

Though dust harmfulness is by no means confined to what happens because of the breathing of dust, most of the emphasis on dust occurrence in industrial work at present is in connection with respiratory disease. However, there are many uncertainties as to almost all phases of the real or supposed harmfulness (respiratory or otherwise) of dust, including the manner in which dust that is breathed accomplishes its damage to health.

Present-day thought of the majority of those conversant with dust disease is largely crystallized in two ideas: (1) That maximum harm to health from dust is brought about by beathing silica dust (and chiefly free silica, SiO_2) in sizes of 10 microns or less (a micron being one-thousandth of a millimeter or approximately one twenty-five-thousandth of an inch); and (2) that the silica dust in the lungs dissolves in or is chemically combined with the fluids of the lung tissue, the resultant chemical action causing transformation (or fibrosis, as it is termed) or partial or entire destruction of the tissue at certain points, frequently bringing about a condition that induces or expedites tuberculosis of the lungs, with ultimate incapacitation and finally death. No known cure is available for silicosis, the worst of the dust diseases; hence, prevention is all important.

Belief is now general that dust may be detrimental to health through its effect of one kind or other on the entire system, or on the throat, bronchial passages, lungs, stomach, and other internal organs, as well as on the eyes, the ears, the nose, and other external organs, and on the skin. Many dusts (metal, mineral, and organic) are explosive; others fire spontaneously with more or less readiness under varying conditions, and practically all dusts have almost universally detrimental effects when they settle, whether in the

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home, in the office, or on the external surfaces of buildings or on the roads, streets, or sidewalks. All of these facts, and numerous others could be added, make dust one of the real scourges of modern life; certainly no sane person can deny that a most determined effort should be made to reduce its occurrence or at least to confine it so as to minimize its multifarious harmful effects, not only on human beings but also on vegetation and animals, as well as on dwelling houses, machinery, and almost innumerable other factors of importance in modern existence.

A number of years ago the South African authorities tentatively and more or less arbitrarily set standards of maximum allowable air-dustiness in mines with bad records for dust disease as 300 million particles by count of 5 milligrams of dust by weight per cubic meter of air. This standards was set without reference to silica content, free or combined, and with little reference to particle sizes or any definite idea as to its efficacy in preventing the occurrence of dust disease.

The announcement has been made from time to time that air-dustiness in the mines of South Africa is kept fairly rigidly below both the standard weight and the count of particles and that new cases of miners' consumption (dust disease) are now practically unknown. One of the numerous difficulties in attempting to set any kind of standard is that the available analytical devices and methods of dust sampling and determination are anything but applicable or practicable or readily workable in connection with at least some industrial conditions, among them mining. Until or unless dust sampling and analytical devices and methods are so simplified that reasonable accuracy can be achieved by intelligent plant employees, rather than by relying on the services of a relatively few highly trained and highly paid technical experts holding a monopoly on the work, the institution of rigid laws or regulations as to allowable air-dustiness will probably result only in confusion and injustice.

In the maze of uncertainties connected with almost all phases of the causation and diagnosis of dust disease, about the only really well-determined fact available is that breathing large quantities of dust (or possibly of certain dusts) over extended periods is likely under some conditions to be harmful to health and that subsequent alieviation or cure is difficult or impossible. Therefore, it would seem to be logical to try to prevent dust formation or to remove dust as soon as possible after its formation, thus preventing it from harming workers through respiration or otherwise. Here is a real job for the engineer, and little or no help can be expected in these vital functions from any agency except the engineers and operating officials.

The most harmful of the ordinary dusts to breathe is probably silica dust, but, on the other hand, not even free silica, supposedly the most detrimental of the silica dusts, is harmful unless it is breathed in considerable quantities and over extended periods. No human being ever lived any considerable time on this earth of ours without breathing silica dust (free silica dust), yet by no means all of the people of the world have or have had silicosis. In other words, the quantity of dust taken into the respiratory organs is a controlling factor in dust respiratory harmfulness, and commonsense indicates that the quantity of dust breathed is one of the dominant factors as to possible harmfulness from any kind of airborne dust. What contitutes that quantity limit no human being knows, notwithstanding the fact that numerous so-called threshold limits are now being announced and that some of them are embodied in State regulations or laws.

Predicting dust respiratory harmfulness on a sliding scale in proportion of the free-silica content of the dust is anything but logical. In the first place, no one knows whether a dust of 1 percent silica is or is not more harmful than a dust of 2 percent or 3 percent or even of 30 percent. Moreover, air with a certain number of dust particles per cubic foot, with a silica content of 1 percent, or any other percentage, probably would be far more harmful to one person than to another; to a person working on a contract basis with the added incentive for working at maximum capacity than to one on a day-pay basis; or to a person working in an atmosphere of 85° or 90° F., relative humidity 90 or 95 percent, than to one working in atmosphere of 60° F., relative humidity 60 percent. And there are numerous other more or less similar contributing factors that make unworkable or futile the establishment of regulations as to allowable number of dust particles on a sliding scale in proportion to silica content of the dust.

Sampling dust in mine air with the sugar tube in a Lake Superior iron mine. This method of sampling is no longer used in the United States.

Dust prevention—one of its sources underground. Dry stopers such as these are sometimes known as "widow makers" by the miners because of the bad dust condition they create.

In some industries such as metal mining and tunneling, there may be as many different percentages of silica in the mine air as there are places being worked, and in many metal mines it is entirely unlikely that the percentage of silica in the air of a working place today will be at all like the percentage of silica in that same place tomorrow. Application to most metal mines of the sliding scale of allowable number of dust particles in the air in proportion to silica content would be utterly impossible to enforce or fulfill.

In view of the numerous uncertainties as to the sampling and determining of air-dustiness, including equipment, methods of determining, so-called threshold

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limits, and numerous other phases of the technique of ascertaining the degree or amount of air-dustiness, the operating man is likely to be utterly confused as to what constitutes a dusty atmosphere. One commonsense answer is that any atmosphere in which dust is visible to the naked eye is certainly too dusty to be breathed with safety by human beings, and the wise, farsighted, human employer will immediately start to decrease the dust content in any atmosphere where dust is visible. After he has eliminated visible dust, there may still remain enough very small invisible dust to cause harm to the health of those who breathe it, but in any event if he has exerted sufficient well-directed effort to remove the visible dust, it is certain that much of the smaller invisible, and probably most harmful, dust has also been removed.

Manifestly, if dust is kept out of the air breather by workers, the latter cannot succumb to dust disease of a respiratory character. In the elimination or at least limitation of dust in the air where men work, the mining man, therefore, has in his hands the really effective means of prevention of respiratory harm from dust. Some suggestions are made to those engaged in metal mining as to feasible available methods of handling the dust problem.

The main sources of dust in metal-mine air, in the order of importance, are: Dry-drilling holes for blasting; shoveling or mucking very fine dry material at the working face, which is usually poorly ventilated; loading cars from chutes; dumping loading cars into chutes; and timbering. Dry crushing and other occupations in metal-mine mills are also likely to be dangerously dusty.

The best remedy for the dust menace in mines, other than preventing its formation, appears to be the universal coursing of currents of air to remove the dust, as it has been proved that the very fine, most dangerous dust in metal mines remains suspended in still air for several hours. Dust-prevention devices of proved success, such as the presentday self-rotating wet stoper and other wet-drilling equipment, should entirely supplant dry drilling; their use should be enforced upon both miners and operators in metal mines. Care should be taken, however, that holes are not started or "collared" dry. To date no workable device is available for removing dust in dry drilling in underground mines.

The places where men work, especially the face region and at ore-dumping or ore-loading chutes or other possibly dusty places, should be adequately ventilated by constantly flowing currents of fresh, or at least dust- and gas-free air to remove from the atmosphere breathed by workers any dust or gases that may arise from blasting, drilling, timbering, mucking, or other activities of the workers or of machinery or equipment used by them.

To have adequate ventilation, it is almost a necessity to have mechanically induced ventilation in the form of a modern fan, preferably located on the surface and so arranged as to permit readily reversing the direction of airflow in case of emergency, such as a fire. A ventilation system is, however, essentially worthless unless the air brought into a mine is kept under control and is conducted to the faces and places where men work.

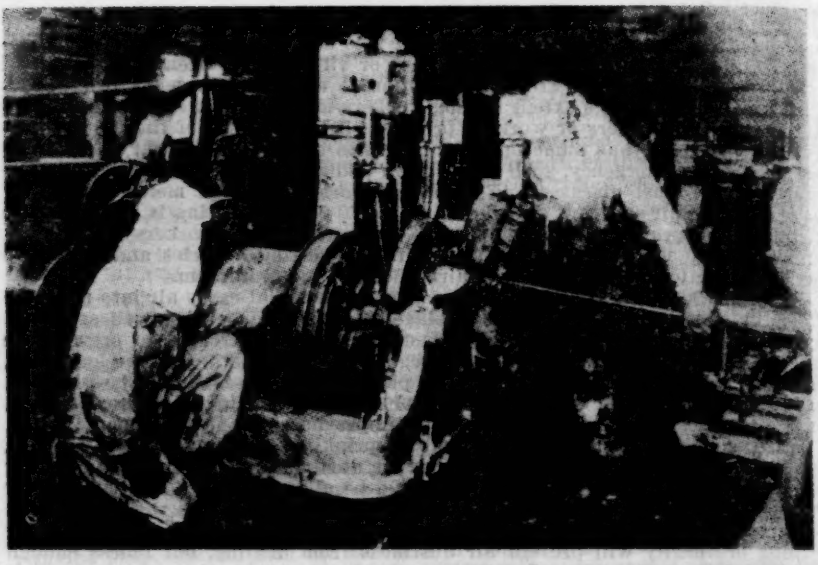
Many metal mines could well afford to adopt the duplicate opening system of coal mining to keep adequate quantities of moving air reasonably close to the face, and certainly every metal mine should have at least two openings to the surface for safety as well as for ventilation; in any event, fan tubing systems can and should be used to remove or dilute airborne dustiness or smokiness from or at working faces, but utmost care should be taken to prevent recirculation of air or transmittal of already polluted air. Under some conditions exhaust systems may be advantageous; in others force systems; and in many cases a combination of both, or rather use of the one alternately with the other, is advisable and feasible.

Most metal mines should use the split system of ventilation of progressive coal mines in which each mine is divided into sections and each section ventilated by itself, with removal of the return or vitiated air, often highly charged with finely divided dust, from each section to and through separate airways. This prevents to a large extent forcing workers in one part of a mine to breathe air vitiated by workers or working processes in other parts of the mine. Adequate air splitting has numerous advantages in conducting ordinary operations and in case of emergency, such as a fire, in addition to aiding materially in the prevention of dust disease; and several modernly operated metal mines now have effective air-splitting ventilation systems. If air-splitting is not done, the metal mine operated with any regard to the health of the workers will be well provided with water blasts and sprinkling or wetting agencies and will have working practices designed to hold airborne dust to a minimum.

Dry downcast shafts as well as tunnels or inclines that carry air into the mine from the surface and also act as haulage roads should be kept well sprinkled by suitably placed sprays or water blasts or otherwise treated to prevent the incoming air from being highly impregnated with dust. Surface ore bins, crushers, mills, or other dust-producing places or processes should be removed, so far as feasible, from the vicinity of mine openings that take air into the mine, as it is manifestly poor policy to send dust-impregnated air into a mine.

Water should be used in drilling and in sprinkling mine walls, floor, timbers, muck piles, ore and waste chutes, and other dust-making or dust-disseminating places or processes. No dry drilling should be allowed at any time or for any purpose in any underground metal mine, unless possibly where the drilling can be done with an auger. The use of some device, such as a dust trap, with dry drilling ordinarily will prevent air dustiness from drilling, but unless enough provision is made to assure that the nonuse of water at the face does not result in excessive occurrence or dissemination of dust from blasting, mucking, hauling, and other processes, the net result is likely to be an increase rather than a decrease of air dustiness. At present no effective substitute for water is available in metal mining to hold air dustiness within safe limits at the face region.

Wetting down the muck pile to keep the dust down. The machine man has connected the air hose to the waterline for this desirable preliminary to his shift's work.



Fume as well as dust must be guarded against in minework. Here in a confined hoist room the workmen pouring babbitt are provided with hoods for their protection.

Fine dust, several pounds in weight, that would have filled the air around the machine man had it not been sucked away by a collecting device as fast as made. Here it is seen in the base of the collector's filter chamber.

No blasting should be done during the working shift, as, next to dry drilling, blasting is likely to be the dust producer in mining. After blasting any region in which blasting is done with men on shift, the place should be definitely cleared of smoke, fumes, and airborne dust before men are allowed to return to work, and the first duty of the workers on returning to the blasted place should be thorough wetting down of the entire region, including the muck pile.

Good practice makes it advisable to wet down the face region before blasting, especially if men are in the mine during blasting; and in many poorly ventilated metal-mine faces water blasts throwing a finely divided spray of water (probably under pressure with compressed air) should be kept within such distance as to be protected from flying particles from the blast. The water should be started before blasting, continued in operation during the blasting processes, and kept in operation for a considerable period after blasting. Even then men should not be allowed to return to the place that has been blasted until at least half an hour has elapsed.

Utmost care should be taken in the selection, storage, and use of explosives to see that a minimum amount of harmful gases is made in blasting, as there is good reason to think that the breathing of even minute quantities of some gases given off in blasting has definite unfavorable health features to those who breathe dusts.

Crushing ore underground at or near downcast air shafts is decidedly poor policy from the point of view of the health of the workers, and underground crushing should be avoided; but where underground crushing operations are in use, the region around them should be adequately protected by water sprays, water blasts, or other methods of settling or filtering dust out of the air, to insure that dust is absolutely removed from the air after it leaves the crushers and before it reaches the workers.

Where for some good reason it is not feasible to reduce air-dustiness to reasonable proportions, and whenever one can see dust in the air, no further test is needed to know that dangerous dust conditions for breathing of workers are probably present. Numerous makes and types of dust respirators are available which, though not comfortable to use, give protection and should be worn. However, the wearing of respirators is usually conclusive evidence of failure on the part of management to utilize effective means of eliminating the dust menace to the health of its workers.

Unquestionably, much ill health, including dust disease, of mining people is due to unusual and unnecessary amount of exposure to extremes of heat and cold, complicated with sudden changes from one extreme to the other, with little or no protection from attendant or resultant bronchitis, pneumonia, and related diseases. The mining engineer can and should do much to eliminate those hazards, and this can be accomplished by giving much more attention in future to safeguarding workers from undue exposure to dusts, gases, high temperatures, water, and similar discomforts in transporting them into and out of the mines; by giving real attention to air-conditioning of mines, especially in and at the working places; and in the construction and maintenance of up-to-date types of wash or change houses. These items have been looked upon largely as frills, when, as a matter of fact, they are necessities if the so-called racket in connection with occupational disease is to be combated with a reasonable measure of success.

Before any worker is employed he should be given a careful physical examination by a competent doctor (and the examination should be thorough and the doctor competent). If he is found affected with any respiratory disease, especially tuberculosis of the lungs, he should not be employed for any work in which dust in any considerable quantity is more or less continually in the air of the working place. This procedure is frequently resented, but it is not only justifiable but should be made mandatory to protect the worker, the employer, and the general public.

All persons employed in work of a dusty nature or suspected of being dusty should be given a physical examination at least annually, and any person found afflicted with respiratory disease should not be allowed to continue in dusty work, though justice demands that such men should be given other employment and at essentially the same rate of pay unless it can be proved that the incapacity, trivial or serious, is due to employment previous to that in which they were engaged when the respiratory trouble was found; and it is imperative that precautionary measures should be taken to prevent data from physical examinations from being used unfairly by employers, employees, or others.

Much should be done to clarify numerous uncertainties as to air-dust harmfulness before trying to establish more or less rigid air-dust standards by legal means. At present there is a definite lack of knowledge as to the size of airborne dust likely to be harmful, and present-day so-called standards of air-dustiness are built on numerous uncertain premises on this point alone. Different authorities find varying maximum and minimum sizes of dust in lungs of deceased silicotics, ranging from as small as 0.2 micron to as large as 10 microns, and from this fact it is deducted that as far as lung harm is concerned the dust to be avoided is that from 0.2 to 0.5 micron on the low side to 6 or even as high as 10 microns on the high side. This leaves much leeway, because an air-dust sample containing 10 million particles (0.5- to 6-micron size) per cubic foot of air might easily have 30 million particles 0.2 micron to 10 microns in size. Moreover, if the solution theory of dust harmfulness to the lungs is correct, there is good reason to think that particles much smaller than 0.2 micron are very likely to be harmful. To hold that the only harmful dust sizes are those found in the lungs is anything but good reasoning, because it is certain that dusts from 10 to 100 or more microns in size when floating in the air are drawn into the nostrils and other protective air passages, and if in large numbers they soon clog these protective agencies and passages, permitting practically free unobstructed entrance of the so-called harmful dusts (say 0.2- to 10-micron sizes) into the lungs to perform maximum injury. It does not seem to be logical to disregard these larger sizes entirely, as is now done almost universally in the so-called dust standards being considered and announced.

The present-day instruments and methods for sampling airborne dust and making the determinations as to number of particles present are not accurate or definite, even when handled by technically trained experts; and methods or instruments applied to certain industrial conditions are wholly unsuited to others. A condition as to air-dustiness found in one sample in a certain place is unlikely to be similar to another sample taken immediately afterward in the same place and in the same manner, and this is true where the sampling is done instantaneously by grab method or over a period of several minutes. In other words, the technique as to quantity particle determinations in air-dustiness is not definite, accurate, fair, or dependable, not only as to conditions as between different plants but even as between different time periods in the same place in any one plant. With all of these, as well as numerous other, uncertainties as to airborne dust, it seems to be a travesty on justice to try to embody in laws, and regulations having force of law, rigid standards as to air-dustiness. If quantity standards covering airborne dust are made they should certainly be labeled "tentative," and the technique of taking the air samples and making the particle determinations should be very carefully outlined and enforced. Otherwise much injustice can be inflicted through inexperience or the malice of the persons making the determinations.

At present it is evident that the legal aspects of dust and its health effects are being accentuated long before fundamental knowledge on which to base the laws or regulations has been developed, and unquestionably some of the laws or regulations recently put into effect or soon to be enacted will require considerable amendment or alteration when really dependable data are at hand. Meanwhile, numerous agencies, committees, and commissions are working on the manifold ramifications of the problem, and much research work is being done not only in laboratories but also in the mines and other industrial plants.

The Bureau of Mines is conducting laboratory work on numerous phases of the subject, but particularly in trying to evolve suitable methods and equipment to determine air-dustiness that will be applicable to mines and mining. Field investigations by the Bureau of Mines, as well as by individual mining companies, are also under way in connection with adaptation of wetting methods in drill holes, mine surfaces, roadways, and working places in general; the effect of sharpness or dullness of drill steel on air-dustiness; use of water blasts and mists with or without oil to reduce air-dustiness; air-dustiness with use of wet drills with and without compressed air going through the drill steel, as well as the effect of lack of repair of wet drills on air-dustiness; application of air-conditioning methods in reduction not only of air temperature and humidity but also of air-dustiness; rotation of workers from dusty to less dusty occupations from time to time; application of exhaust hoods, cloth, and other filters to mining in attempting to reduce the dust content of the air breathed by workers. These and numerous other research problems of an engineering nature are being studied; and, after all, if the dust menace in mining is to be solved, the solution rests largely in

the hands of the engineers and operating men in providing conditioned air to workers in and around mines.

In a recent report (November 1936) on preventive engineering in connection with air-dustiness, by a committee composed of well-known dust experts, occurs the following:

"It would be well to realize that men working in dusty trades suffer far more from respiratory troubles of all kinds than do men who work in clean air. The evidence that excessive dustiness of any kind is harmful is beyond argument."

In addition to calling attention to the probable harm to health from excessive dust, it might well be added that air-dustiness has numerous harmful features aside from those which affect health. One is the fact that dusty air very greatly reduces visibility, and in the dust storms in the Dust Bowl early in 1936 visibility at times was reduced to practically zero in midday. A coal-mining study shows that visibility was reduced 75 to 90 percent during the operation of certain dusty underground processes, and when it is taken into consideration that the underground worker's lighting facilities are poor at best, and that frequently he is working under surroundings that ought to have maximum light if he is to protect himself adequately, this heavy reduction of visibility due to dusty air should in itself be sufficient reason for directing maximum effort against occurrence of dust in air in any place where people must work.

Unquestionably one of the main safety, efficiency, and health problems confronting our mining men in eradication of dust from mines or mining plants or of diminishing or diluting it to such an extent that it will not be a menace to the mine or plant and the workers therein.

Mr. METCALF. The remaining documents submitted—are you submitting these for the information of the committee?

Dr. FLINN. Yes, sir.

Mr. METCALF. These will be incorporated in the files of the committee unless there is objection. If not, it is so ordered.

Do you have anything further?

Dr. FLINN. I have nothing at the moment, sir. There was one question asked this morning, which was what the figure 36 meant in that table. That means that there are 36 separate diseases listed in that State as being a schedule for compensation.

Mr. METCALF. Where it says in Texas there would be 46 diseases listed there; is that right?

Dr. FLINN. I believe that is correct.

Mr. METCALF. Does the gentleman from Alabama have any questions to ask either of these witnesses?

Mr. ELLIOTT. I would like to ask Dr. Doyle a question or two. I was very much impressed, Dr. Doyle, with your testimony, and the manner in which you have prepared and illustrated it. I would like to ask you this:

I believe those charts covered the years 1950 to 1954. I wondered whether you have any money to continue that type of study.

Dr. DOYLE. There was no special appropriation for that type of study, except out of our regular operating budget.

Mr. ELLIOTT. Where did you get the money to make this 1950 to 1954 study?

Mr. DOYLE. It came out of our operating funds.

Mr. ELLIOTT. And approximately what did that study cost?

Mr. DOYLE. Roughly $10,000.

Mr. ELLIOTT. It seems to me, at least, that it is a logical conclusion that this is the type of thing that ought to have continuing study to determine whether or not the premises that suggest themselves necessarily follow.

Let me ask you this. I get the impression that you are rather an objective-minded gentleman of a scientific bent, and perhaps you won't

want to answer this question, but I would like to ask you this question and see if you can answer it:

Do you think the evidence now before you and others familiar with this problem indicates that the future is going to teach us that a less amount of silica particles per unit of air measure may cause silicosis or pneumoconiosis, rather than the figure that is now set as the limiting line—that index figure 5 that you mentioned awhile ago?

Mr. DOYLE. I do not know that I quite understand your question, sir.

Mr. ELLIOTT. Let me try again. You testified that there was a certain unit of measurement of dust particles or silica particles in the air below which it was considered safe for workmen to work. Is there any evidence up to date that the number of particles by subsequent investigation may be lowered in setting a safe level of silica particles for workmen?

Mr. DOYLE. The maximum allowable rate of 5 million particles per cubic foot is pure silica dust. At the present time there is no indication that this level should be lowered.

Now, as I attempted to point out this morning, this is a function both of time and the concentration to which the men are exposed.

Now, then, it may have been in the older days when the concentration was considerably above this, the disease may have developed, say, in a course of 15 years. Now, with the concentrations down in the vicinity of 5 million particles per cubic foot, it may take as long as 20 or 25 or possibly 30 years for the disease to develop. We have not had enough experience at this time to answer your question directly.

Mr. ELLIOTT. You need more research in this field, do you not?

Mr. DOYLE. Yes.

Mr. ELLIOTT. That is all, Mr. Chairman.

Mr. RHODES. Do you mean by that, that if this factor is 5 or lower, that a person never would get silicosis?

Mr. DOYLE. If exposed for sufficient number of years, it is quite possible, sir, that he would get it.

Mr. RHODES. I have a question here right after I copied that formula, and that is, Is there any correlation between concentration and time, and you just said of course that there is a function involved there.

Mr. DOYLE. It is a function of both; yes, sir.

Mr. RHODES. I am wondering if there have been any studies based on the probabilities of the average individual getting silicosis if he is exposed to a situation where that factor is 6 for a definite period of time? Do you know how long it would probably take for the average individual to get silicosis if the factor is 6?

Mr. DOYLE. This is not a pure mathematical formula.

Mr. RHODES. I realize there are all sorts of different types of individuals.

Mr. DOYLE. That is it. There is a matter of individual susceptibility, too, which becomes of great importance in this, because one man might be much more susceptible than the other. So it becomes quite impossible to differentiate between 5 million particles and 6 million particles. So we have to do this over a wide range. It is 5 million, 10 million, and 15 million, and so on.

Now, as I referred to this morning to the granite study in Vermont, here we have had man exposed since 1935. That is at concentrations

less than 5 million particles per cubic foot. Within the limitations of the X-ray equipment that has been used in X-raying these men, we have had no silicosis to develop in those men whose initial exposure was subsequent to the installation of dust control. Now, this has been approximately 20 years.

I think we will have to wait another 10 years or so before we can definitely state that no men are developing silicosis as a result of this exposure.

Mr. RHODES. As I understand it, you said that the concentration times the percent of free silica should not be more than the key figure of 5. When you say that, have you not already crossed the bridge of the application of different individuals? In other words, are you not there applying a formula which takes into account the fact that you have to have that over a wide range and, therefore, you cannot apply it to any particular individual?

Mr. DOYLE. That is right.

Mr. RHODES. Now, I am asking you if you have gone a step further and applied to this imaginary average individual the further factor of time, to try and determine what will happen, for instance, at 6, or what will happen at 7, or what will happen at 4.

Mr. DOYLE. No, sir; we have not tried that. I might state that this index should be used as a guide rather than an absolute figure. In actuality, the dust concentrations should be kept as far below this as is reasonable and is economically feasible.

Mr. RHODES. But you feel at that figure the likelihood of a person getting silicosis is rather strong and above the figure it becomes stronger in some proportion?

Mr. DOYLE. As you go above that figure the likelihood becomes greater.

Mr. RHODES. We don't know whether it is a direct proportion or whether it is not; is that right?

Mr. DOYLE. That is correct. It is not because of this individual's susceptibility.

Mr. RHODES. That is all.

Mr. FJARE. I am particularly interested at the moment in these compensating programs that are the various State programs. Does your survey or study show how many States have compensating programs or statutes?

Mr. DOYLE. Forty-three States and Territories, which compensate for occupational diseases.

Mr. FJARE. By one means or another.

Mr. DOYLE. Yes.

Mr. FJARE. I am talking about silicosis in particular and specifically.

Mr. DOYLE. I think all 43 have these which include silicosis in their coverage.

Mr. FJARE. By one means or another.

Mr. DOYLE. Yes; that is right.

Mr. FJARE. Would most of these programs, or I assume most of them would compensate only in the case of total disability due to silicosis or in case of partial disability?

Mr. DOYLE. You are getting into a field which is outside of my competence. There are several States which do compensate for partial

disability. Among them are West Virginia and Utah. There may be others, but I don't have knowledge of it.

Mr. FJARE. Montana does, in a sense; does it not?

Mr. METCALF. Montana compensates them with the welfare act; when you are totally disabled we give them welfare payments. That has not any relationship to workmen's compensation.

Mr. FJARE. I mean a compensating program.

Mr. METCALF. If that is wrong, I will appreciate a correction somewhere along the line.

Mr. FJARE. Now, these figures that you have used in this map to indicate the setup of the cases of silicosis throughout the United States, such as Montana with its 598—is it possible that a silicotic could be reported in 2 different States, that is 1 who was in Arizona for a while and then moved to Montana?

Mr. DOYLE. We attempted to eliminate that by checking the names from one State to another. I do not think that we would find much duplication here. A man is not eligible for compensation in two States, either, so that should automatically take care of it.

Mr. FJARE. Are you aware of any mining companies which demand as company policy a physical examination of a miner as he enters and when he leaves to detect possible silicosis?

Mr. DOYLE. I understand this is a policy of some companies.

Mr. FJARE. Either to determine whether he has silicosis when he comes, or to have it when he leaves.

Mr. DOYLE. I understand some mining companies do include a preemployment examination as a part of their routine in employing new people. This would include a chest X-ray.

Mr. FJARE. As one final question, as a medical doctor interested and of course concerned with the elimination of the silicosis, what in your personal opinion is the proper approach? Is Federal legislation the answer to it, or is it a matter of education on the part of industry, or is it a job for organized labor, or what in your personal opinion? You must be interested or you would not be undertaking these studies to eliminate it, and how should we proceed?

Mr. DOYLE. You are asking me in my capacity as a physician, which I am not; I am an engineer.

Mr. FJARE. You are interested in that end of the business, let us put it that way.

Mr. DOYLE. Well, the Public Health Service and the Bureau of Mines have worked for many years in the control of this problem. We of course look upon it as a public health hazard. I think the figures that I have given this morning serve dramatically to show what can be done over a period of years through education in the reduction of a disease. I am not in a position to say, sir, whether we need legislation or not.

Mr. FJARE. That is all.

Mr. RHODES. Well, is it a public health problem because of the likelihood that tuberculosis will develop? There is nothing contagious about silicosis itself; is there?

Mr. DOYLE. No.

Mr. RHODES. So that the general weakening of the condition and the added susceptibility to tuberculosis would be the reason it is a public health problem.

Mr. DOYLE. It is a public health problem from that viewpoint, and also because public health embraces all diseases to which man is susceptible—occupational diseases being one of them.

Mr. RHODES. You stated this morning that there were certain recommended limits on radioactive materials, I believe. Would you care to elaborate on that a little bit and tell us what those limits are, and how you arrive at them?

Mr. DOYLE. Well, the present limits, as used by 2 of the States in the Colorado Plateau—there are 300 micromicrocuries per liter of air in equilibrium of radium A, radium B, and radium C prime.

Now, this was arrived at at a conference which was held in Utah, Salt Lake City, in February of 1954, I believe. The limit was arrived at by biological calculations from our experience which came to us from the German mines, and also on the basis of animal experiments. I had no part in arriving at the figure, but this was a mechanism through which the conference arrived at the figure of 300 micromicrocuries.

Mr. RHODES. Is the danger of radioactive materials a cumulative thing?

Mr. DOYLE. Yes; it is.

Mr. RHODES. Would that also be true to some extent of inhalation of free silica. Is a person who has been subjected to high rates of free silica in the air any more susceptible to silicosis after he has been away from the environment for a while and then returns than another person who comes in new into an area in which there is high silica content?

Mr. DOYLE. May I yield to Dr. Flinn on that question?

Dr. FLINN. If I understand you correctly, the man who has had his lungs damaged by free silica and still has residual deposits of the dust in his lungs would be more likely or he already has a start on the disease. That would mean it would not take so long for him to contract a more advanced stage of it, as a man who did not have such damage.

Mr. RHODES. Do people ever die of silicosis, or do they die of a disease which is caused by the weakening effect of silicosis?

Dr. FLINN. They can die from silicosis. It is more common for them to develop complications, usually infectious, and very frequently being of the tuberculosis nature. There is a so-called heart condition, which means that the right side of the heart has to work harder to force the blood through the lungs, and it enlarges and weakens and some of the men die from heart disease caused by the lung condition.

Mr. METCALF. Dr. Doyle, this morning you suggested that it was silica dust of a certain size that caused silicosis. I believe it was 5 to 10 microns.

Mr. DOYLE. 0.5 to 10 microns, I believe.

Mr. METCALF. So that in addition to the maximum allowable limit of silica dust in the air, we would have to be concerned with the size of the silica dust.

Mr. DOYLE. That is correct, sir.

Mr. METCALF. We don't know what happens to this, whether this small dust, less than five-tenths of 1 micron, causes silicosis or not; is that true?

Mr. DOYLE. There are people in certain scientific fields that believe that those particles less than a half micron in size do have physiological

significance. There are still others who take the opposite point of view, that they have no significance. So this is an area in which further investigation is needed.

Mr. METCALF. Can you tell me why it is that it is silica dust of this particular size that causes the silicosis to develop, or maybe Dr. Flinn would prefer to answer that question.

Dr. FLINN. The particles above 8 or 10 microns in size are not likely to enter the lung sacs or be retained if they do. So you have a limiting area at the upper end. Particles less than 5 microns some people think may not be retained in the lungs to any appreciable extent, and in total mass they would make very little total substance as compared to larger particles.

Mr. METCALF. It is only particles of this size that get down into the terminal air sacs of the lungs that cause the disease?

Dr. FLINN. That is right.

Mr. METCALF. Now, in certain mechanical devices that have been used in mines and smelters and otherwise to clear the air, largely they take off the heavier particles, don't they? That is the larger particles?

Mr. DOYLE. Yes, they take off most of the particles above this 1 micron size.

Mr. METCALF. Then even the most efficient machines would leave some of the dangerous silica dust remaining in the air.

Mr. DOYLE. They would leave these particles below 1 micron size.

Mr. METCALF. And perhaps particles below one half a micron may or may not be dangerous, needing further research to determine it.

Mr. DOYLE. That is correct, sir.

Mr. METCALF. Now, you suggested this morning that by mechanical contrivances we probably have solved the problem of silicosis. Would you name some of the various devices that have been used to bring down the dust to below the maximum allowable limits?

Mr. DOYLE. Yes, sir. In the mining operation, the primary method is through wet drilling, and handling the ore in a wet condition while it is in the mine. That is supplemented by ventilation to remove or dilute the dust that happens to be in the atmosphere that you could not remove through water and wet methods.

Then the generally accepted procedure in industry for controlling dust is through local exhaust ventillation. The local exhaust ventilation will be very effective in removing practically, all of your dust, including that less than 1 micron in size. If your exhaust system is placed close enough to your point of generation, that can be done.

Those are the two primary methods, the wet method and the ventilation.

Mr. METCALF. In the adoption of the wet-drilling method, whereby dust is kept down as much as possible, and the exhaust method to eliminate the rest of the dust, it will get you down below the maximum allowable limits?

Mr. DOYLE. It will begin to approach it; yes, sir. That is hard to make a statement on categorically, because there are many other conditions which may produce it.

Mr. METCALF. Some of the members of this subcommittee inspected some of the facilities in the Anaconda Co. mines and some very excellent dust-removal devices were in operation there. I believe they have had wet drilling in the Anaconda mines for a number of years.

On the other hand, we still have 588 people drawing silicosis benefits in the State of Montana. I was trying to find out why those two figures exist.

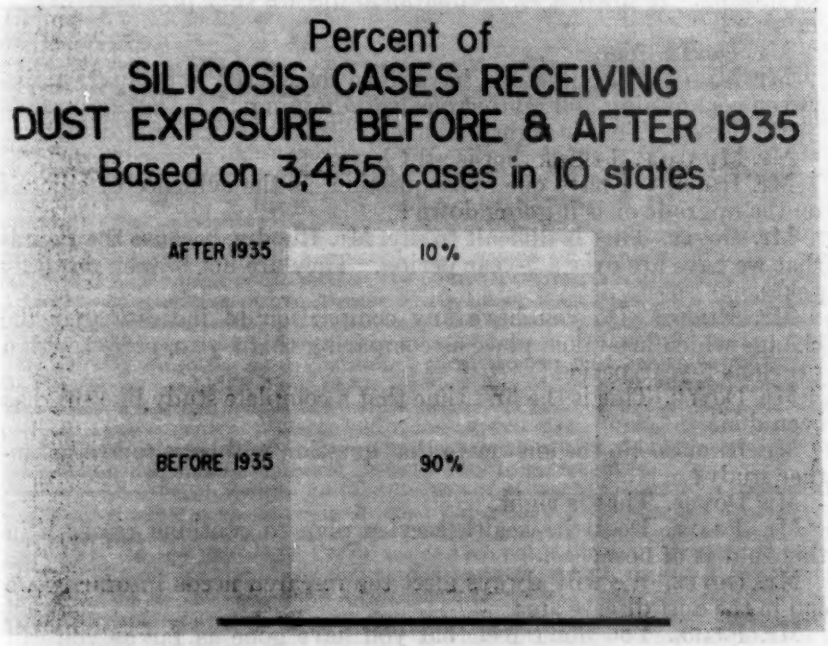
Mr. DOYLE. Well, this 518, we have no idea when they had their initial exposure.

Mr. METCALF. They could have had it before they had wet drilling in Anaconda mines or before they had improved ventilation.

Mr. DOYLE. That is right, sir. As I attempted to point out this morning, most of the mining companies and industries began to adopt extensive dust-control measures about 1935. That is why we use that as a baseline.

I failed to show you this chart this morning, and I thought it was adequately brought out in the text, but we attempted to relate these 10,000 cases to their initial exposure dates. We were able to do that in 3,455 cases from 10 States.

(Chart referred to "Percent of Silicosis Cases Receiving Dust Exposure Before and After 1935, Based on 3,455 cases in 10 States" follows:)



Now, of the 3,455 cases, 90 percent of those men had their initial exposure prior to 1935, and 10 percent had their initial exposure subsequent to 1935.

We were unable to analyze each one of these cases individually as to when they had their initial exposure, or when the company they worked for adopted dust-control measures. So 1935 is simply a benchmark, rather than a fine line of demarcation.

Mr. METCALF. Now, these various tables that were submitted this morning as to some of the fatal and nonfatal accidents in the mining industry would not include an occupational disease such as silicosis; would they?

Mr. DOYLE. I would not think so; no, sir.

Mr. METCALF. So that when we have a comparison such as submitted this morning between the logging industry, for example, where silicosis is not prevalent, and mining, where silicosis could arise, you also would have to consider the fact that you could get an occupational disease and get other compensable or possibly compensable injuries in mining or some other industry where silicosis is one of the dangers inherent in the industry. That would bring those percentages up somewhat so that it would make mining more comparable to some of the more dangerous industries; would that not be true?

Mr. DOYLE. Generally, in reporting accident statistics, they do not include occupational diseases in the accident statistics.

Mr. METCALF. You have an industry, such as the logging industry, where occupational diseases are rare, and then you have an industry, such as the mining industry, where occupational disease is also one of the dangers with which to be confronted. You would have to take that into consideration to compare the two industries.

Now, there was a comparison between coal mining and other types of mining. Is silicosis an occupational disease very prevalent in coal mining?

Mr. DOYLE. Yes.

Mr. METCALF. So it would have to be considered in comparison between coal mining and nonferrous metal mining.

Mr. DOYLE. That is right.

Mr. METCALF. I think that is all I have.

Mr. RHODES. I have one more question, Is the evidence of silicosis on the upgrade or is it going down?

Mr. DOYLE. That is difficult to say, Mr. Rhodes, because the figures that we have are over a 5-year period. They are not broken down by years.

Mr. RHODES. Do you have any comparison to indicate that the change which has taken place as comparing this 5-year period with a previous 5-year period?

Mr. DOYLE. This is the first time that a complete study like this has been done.

Mr. RHODES. So the answer to that question will have to await further study?

Mr. DOYLE. That is right.

Mr. FJARE. Does the health service plan to continue research in this field as of now?

Mr. DOYLE. We will always meet the research needs insofar as we can in the dust disease area.

Mr. FJARE. You don't feel that you have gone as far as you can in the field of research?

Mr. DOYLE. Oh, no, sir.

Mr. METCALF. I want to compliment both of you for a very helpful and very informative statement and I know it will be extremely helpful to the committee in the consideration of not only this legislation but this whole matter of occupational disease.

When you first came on the stand, you supplied me and the members of the committee with two statements. One is a paper, presented at the American Mining Congress, on silicosis research, which was done by the two witnesses. Unless there is an objection, it will be inserted

in the record immediately after this testimony, and also an article from the American Medical Association Archives of Industrial Health, some facts on the prevalence of silicosis in the United States by Victoria M. Tracedell. Unless there is objection, that, too will be inserted immediately following your statement in the record.

I notice in the latter publication on prevalence of silicosis certain charts are reproduced. They are the same charts that were presented to the committee, and in the preparation of the record the charts will be reproduced in Mr. Doyle's testimony, and then referred to in the Tracedell article.

Mr. DOYLE. These charts will be reproduced and given to the record, too, sir?

Mr. METCALF. They will be left with the committee and reproduced in the record at the point at which they were referred to in your testimony.

Mr. DOYLE. Yes, sir.

Mr. METCALF. But they are the same charts that are referred to in this other article.

Mr. DOYLE. Only the first one, the map of the United States is the same chart. The others are a different way of illustrating the same information.

Mr. METCALF. The first chart then will be reproduced in your testimony, and only mentioned in the second reproduction.

(The documents are as follows:)

SILICOSIS RESEARCH [1]

Henry N. Doyle, B. S.,[2] and Robert H. Flinn, M. D.[3]

It is a pleasure to have the opportunity to discuss with you today some recent developments in the prevention and control of silicosis. If I may be permitted a definition of silicosis at the outset, I believe it will give us a better mutual understanding of the disease entity under discussion. We understand silicosis to mean a pathologic condition of the lungs caused by breathing significant amounts of free silica dust over varying periods of time. There are four relevant factors so far as the causative agent is concerned; namely, number of dust particles per unit volume of air, particle size of the dust, mineral composition of the dust, and length of time the worker is exposed to the dust. In this disease there is general replacement of the normal elastic tissue of the lungs by unyielding, inelastic fibrous tissue, which causes shortness of breath, decrease in lung expansion, and an increased susceptibility to tuberculosis.

The Public Health Service and the Bureau of Mines have long been concerned with the silicosis problem. Our interest dates back to 1914, when we made a joint investigation of silicosis in the tri-State area of Oklahoma, Kansas, and Missouri. In the 1920's and 1930's, we carried out a series of investigations in the dusty trades which have contributed basic data both on the pathology of silicosis and on the control of hazardous exposures. These studies helped to define the role of such factors as dust concentration, particle size, composition of the dust, and duration of exposure and led ultimately to the adoption of 5 million particles per cubic foot of air as a maximum allowable concentration for crystalline silica dust.[4]

There have been few fundamental changes in the concept of the epidemiology of silicosis since the performance of these field studies of the Public Health

[1] Presented at American Mining Congress, Los Angeles, Calif., October 4, 1956.

[2] Assistant Chief, occupational health program, Division of Special Health Services, Bureau of State Services, Public Health Service, U. S. Department of Health, Education, and Welfare, Washington 25, D. C.

[3] Chief, Division of Health, Bureau of Mines, U. S. Department of the Interior, Washington 25, D. C.

[4] Accomplishments in the Epidemiologic Study of Silicosis in the United States, H. N. Doyle, V. M. Trasko, W. M. Gafafer, and S. E. Miller, A. M. A., Archives of Industrial Health, July 1955, vol. 12, pp. 48–55.

Service and the Bureau of Mines and the laboratory investigations at the Saranac Laboratory for the Study of Tuberculosis, Saranac Lake, N. Y. These studies led to the general conclusion that silicosis results from the inhalation of crystalline silicar in particulate form for prolonged periods of time and that the rapidity and extent of development are in general directly related to the number of particles in the size ranges which enter the lungs and are retained, namely, those from 0.5 to about 4 microns in diameter. Concentrations of such dust below 5 million particles per cubic foot of air are rarely associated with the development of disabling silicosis. Striking reductions in the incidence of silicosis have resulted from acceptance of these principles and their use in the design and followup of control measures.

However, despite the enormous amount of research that has been carried out throughout the world on the subject of silicosis, the nature of the action of the silica particle upon pulmonary tissue is not known; that is, the mechanism by which silica produces fibrosis. Nor is it known why the silicotic is more susceptible to tuberculosis than the normal person.[5]

The uncertainty in these medical areas carries over into the field of engineering controls, and today we find ourselves taking stock and wondering whether the accepted techniques for the prevention of silicosis are in reality totally adequate.

Twenty years have now elapsed since the introduction of widespread dust-control programs by the larger mining and industrial companies, yet silicosis cases still occur. Are these cases the result of precontrol exposures, in view of the long, latent period for the development of silicosis? Are they accounted for by the failure to apply controls universally? Or are they occurring because of the inadequacy of present standards? To help answer these questions, the Public Health Service recently undertook statistical research on the prevalence of silicosis. Only cases diagnosed as "silicosis" were tabulated. The following data do not include other types of pneumoconiosis diagnosed as being caused by dusts other than free silica. I believe that some of the findings regarding silicosis disclosed thus far may be of interest to you.

PREVALENCE OF SILICOSIS [6]

Covering the 5-year period 1950–54, the study found 10,362 cases of silicosis that have been compensated or reported in one form or another in the 22 States illustrated in figure 1. These States were selected because of the availability of information and because it was known that silicosis is or had been a problem in these States. If cases processed by compensation agencies but for various reasons denied benefits are added, the total exceeds 13,000.

Of the 10,362 silicotics recorded during this period, about 20 percent were dead; 50 percent were totally disabled; and 30 percent were still working, seeking work, or of an unknown status.

Because of the difficulties surrounding the gathering of these data and because of the limitations inherent in the records themselves, we have good cause to believe that the 10,362 cases are an underestimate of the actual situation. Nonetheless, one cannot deny that 10,362 cases, limited to 22 States, are a sizable number, even if spread out over a 5-year period.

As might be expected, the data reveal that these cases represent primarily an older group, three-fourths of the cases uncovered being in individuals over 50 years of age. This finding, within limitations imposed by the data, supports the current opinion that many of the cases of silicosis coming to light at the present time represents a residue of old cases. However, these data also show that silicosis is occurring among young men with recent exposures.

Table 1 gives the industry in which the silicotic was employed at the time the case was reported. Since two States did not have this information this is an analysis of 10,152 cases from 20 States. This is a numerical distribution of the cases and does not relate the cases to the population at risk. Therefore, the data cannot be used to compare the silicosis hazards between the various industries. You will note that the mining industries produced 6,755, or two-thirds, of these cases. Coal mining, including both soft and hard, ranked highest with 4,079 cases; metal mining followed with 1,637 cases. There were 854 cases for which the type of mining was mixed or was not specified. Drillers, muckers, shovelers,

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[5] Occupational Diseases of the Lungs, Recent Trends in Industrial Health, A. J. Lanza, A. M. A. Archives of Industrial Health, March 1955, vol. 11, pp. 183–184.

[6] Some Facts on the Prevalence of Silicosis in the United States. V. M. Trasko, presented at the 18th annual meeting the the American Conference of Governmental Industrial Hygienists, April 23, 1956, Philadelphia, Pa. (AMA Archives of Industrial Health, in press).

and machinemen were the most commonly mentioned specific occupations. Another 185 cases were associated with the extraction and milling of nonmetallic minerals such as clay, feldspar, and mica, and in tunneling and quarrying operations.

From these facts it can be concluded that silicosis is still associated with a wide variety of industries. If the occurrence of silicosis among young men can be regarded as a criterion, no industry can take credit for complete dust control.

To determine more precisely whether a significant number of new cases are developing among workers entering dusty trades for the first time in the past 20 years, we analyzed 3,455 cases in 10 States for which reasonably adequate employment histories were obtained. Of this number, 344 workers, or 10 percent, allegedly received their entire dust exposure after 1935, or sometime during the past 20 years.

The distribution of the 344 cases, by industries, is shown in table 2. The two groups with the largest proportion of cases receiving total dust exposure in the past 20 years were nonmetallic mineral industries with 32 percent and nonmetallic mining and quarrying with 21 percent. Cases were found with less than 5 years of exposure; but, in general, the exposure period averaged about 15 years.

Preliminary tabulation of data collected on 2,746 cases in 11 States for which tuberculosis was recorded when present, shows that 35 percent also had tuberculosis. It was diagnosed in 33 percent of the 1,763 persons who were alive at the time of the latest record. Forty-nine percent of the 983 individuals who had died during the study period were found to have tuberculosis as well as silicosis.

An inescapable conclusion derived therefore from our statistical study, limited though it may be, is that silicosis continues to be an occupational disease of considerable importance. From the standpoint of dust control, the silicosis problem appears to be more prevalent in those men that had their initial exposure before 1935. Enough evidence was uncovered to suggest that either the application of dust-control measures is not universal or that other factors such as the adequacy of our present standards, the influence of the particle size and the actual toxicity of various forms of silica, are involved. This fact is evident since silicosis is developing among younger men with recent and short exposure to dust. In addition, we must consider that, with less severe exposures, silicosis may take longer to develop than in the past, obviously a possibility that cannot be determined for some years.

The findings also suggest that silicosis is a serious social and economic problem. Over the past 5 years the number of compensation claims for silicosis has been increasing. Liberalization of compensation laws and improved diagnoses have undoubtedly influenced this situation. Moreover, the silicotic is living longer. Medical progress in general and the gradual adoption of preventive-control measures, which have minimized the severity of exposures among men continuing in dusty occupations, have probably contributed to the longevity of the silicotic. The result is that the number of older people becoming eligible for benefits through workmen's compensation or other means is rising.

This inquiry into the prevalence of silicosis has revealed, among other things, the need for better reporting of facts on diagnosed cases of silicosis, uniform classification of diagnostic terminology, criteria of disability, and standards for the supervised employment of nondisabled silicotics. In the absence of previous prevalence data of any kind on silicosis in the United States, it is hoped that the final report on this study, now being prepared, will provide a base line for future evaluations of the occurrence of silicosis.

CLASSIFICATION OF CHEST X-RAYS

Since it appears that silicosis will continue to be a problem of industrial, social, and economic significance for many years to come, the efforts of medical investigators to prevent and treat this disease assume greater significance.

A notable achievement of the past few years has been the development of a system of classification of chest X-rays in pneumoconiosis which is enjoying the interest of industrial physicians, radiologists, and pathologists.[7] The system was accepted by the International Conference of Experts on Pneumoconiosis of the International Labor Organization at Sydney, Australia, in 1950, and is presently being used in Great Britain, France, and Germany.

[7] Classification of Roentgenograms in Pneumoconiosis, C. M. Fletcher, AMA Archives of Industrial Health, January 1955, vol. 11, pp. 17–28.

This system permits uniform differentiation of the various stages of silicosis and other dust diseases included among the pneumoconioses. Thus, the classification of "simple pneumoconiosis" has three defined categories of increasing abnormality, based on the appearance of the roentgenograms of the diseased lung. The classification of "complicated pneumoconiosis" has four categories of increasing abnormality of the film.

This development marks a step forward toward the better understanding of the silicosis problem among investigators in this field. The absence of a standard classification has long been a barrier to the communication and comparison of findings among different investigative groups.

It may be well at this point to clarify the place of the chest X-ray in the diagnosis of silicosis. You may have heard, for example, that such a diagnosis cannot be made by X-ray alone. This statement is true, but it does not detract from the value of the X-ray as a diagnostic aid. All it means is that, on the X-ray film, other conditions may simulate certain stages of silicosis. Thus, siderosis (from inhaling iron oxide), baritosis, and sarcoid, and even miliary tuberculosis, may sometimes resemble stages of silicosis. Nevertheless, the chest film provides for the diagnosis of silicosis the most valuable evidence we have (other than lung biopsy, which cannot be widely applied). Like other evidence in medicine, it must be considered with the patient's history, physical findings, and laboratory studies before a final diagnosis is attempted. A characteristic chest film in a person who has been exposed to silica is very strong evidence for silicosis. The development of changes in serial films during a period of exposure is particularly convincing. It is quite another thing, however, to estimate from the X-ray film alterations in lung function or pulmonary disability.

Numerous studies have shown that the earliest recognizable form of silicosis, generally classified as simple discrete nodular silicosis, is attended either by no recognizable alterations of function or by very slight ones. It is possible that slight alterations of function are not recognized since, to date, all studies in diseased persons have been made after the disease has become manifest. Thus, we can only compare the lung function measurements of the diseased person with those of the so-called average normal man. Possibly, a study of persons early in life, prior to the development of the disease, with repeated studies when the disease is fully developed, would show some reduction in respiratory function. In the advanced stages of silicosis, known as conglomerate silicosis or progressive massive fibrosis recognizable alterations of pulmonary function are usually found readily. They include reduction of the maximum breathing capacity and an increase in the residual volume, which changes interfere with full, free inhalation and exhalation. The oxygen ventilation equivalent may also be slightly above normal.[8] Thus, the diseased person may find it necessary to breathe more air per minute than the normal person in response to physical exercise.

EARLY DETECTION OF SILICOSIS SUSCEPTIBILITY

It is apparent that an inherent limitation of the use of the X-ray in the prevention of silicosis is that the disease has already started before the symptoms are discernible on the chest film. Another tool is therefore needed to detect those individuals that are more likely to develop silicosis early. Such individuals could then be removed from further dust exposure before irreversible changes occur.

It is possible to measure the volume of air contained in the lungs in their fully expanded state (total volume) and also in the state of being as empty as one can make them by voluntary effort (residual volume), the difference between these two volumes being the stroke value (vital capacity) of the respiratory pump. The maximum rate at which the respiratory apparatus can move air into and out of the lung in repeated cycles (maximum breathing capacity) can also be measured.[8]

A recent study has revealed that spirogram tracings of the 3-second timed vital capacity and the maximal breathing capacity are useful screening tests of pulmonary function to detect early function abnormalities, even before subjective or roentgenologic changes are apparent. They have also been demonstrated to be suitable tests for annual or preemployment examinations to detect susceptible or poor risk individuals who may be exposed to environmental lung irritants in their work. These spirograms are reported to be cheap to run, rapid in measurement, requiring only 5 minutes, and easy and simple to obtain for permanent

[8] Functional Abnormalities of Industrial Pulmonary Fibrosis, G. W. Wright, AMA Archives of Industrial Health, March 1955, vol. 11, pp. 196–203.

records. It is further reported that the reliability of the spirogram data has been well correlated with complete pulmonary function studies on a large series of cases with all degrees of pulmonary function impairment, and a wide spread of values has been shown between the normal and the most abnormal.[9]

THERAPY AND PREVENTION

While efforts continue toward the prevention of silicosis through medical and engineering control measures, we must necessarily also be concerned with the development of effective treatment methods. Since 1939, when a group of investigators at the University of Toronto published the results of a series of experiments dealing with the action of fine aluminum particles on the action of silica and their toxic reaction on body tissues, considerable work has been done with aluminum therapy. The Toronto investigators demonstrated that mixtures of quartz and aluminum dust in the inspired air of cage animals did not produce silicotic nodules after a length of exposure several times that required for quartz particles alone; also, that animals exposed alternately to quartz and aluminum particles did not develop silicosis.[10] The effectiveness of aluminum therapy for human beings, however, remains a controversial question, and its use in the United States is limited. Also, its use has not been endorsed by the Councils on Industrial Health and Pharmacy and Chemistry of the American Medical Association [11] who suggested further research. However, at the McIntyre-Saranac Conference of 1955 two American authors reported favorably on its preventive and therapeutic properties,[12 13] but it is difficult to determine what influence dust control may have had in the reduction of the incidence of silicosis.

The value of dust control in preventing silicosis has been clearly demonstrated in a recent study by the Public Health Service and the Vermont Department of Health. This study sought to determine the effectiveness of the control measures that had been established as the result of a study of the granite-cutting sheds made by the Public Health Service in 1923. This earlier study had revealed a universal occurrence of silicosis in those workers exposed to concentrations above 40 million particles per cubic foot, the disease proving almost invariably fatal within a short time after onset. Between the years 1935 and 1937 practically the entire Vermont granite-cutting industry adopted dust-control measures. A study made during the summer of 1956 indicated that few exposures in the industry exceeded 5 million particles per cubic foot. The Vermont Department of Health has provided annual X-ray examinations of the workers since 1935. It is interesting to note that, within the limitations of the X-ray equipment used, not a single case of silicosis has been diagnosed in a granite-shed worker whose initial exposure followed the installation of dust controls. This is the only known example of a silicosis-producing industry in the United States in which it appears that no new cases of silicosis are developing.

CONCLUSION

While various facets of the silicosis problem are under study by different investigators, we must not overlook the importance of reporting cases of this disease, together with other occupational diseases. Only by learning more about where, when, and under what conditions cases of silicosis are occurring, can we effectively direct our efforts to its prevention and control. If the mining industry were to support wholeheartedly and work for the improvement of occupational disease reporting practices, you would be making a sizable contribution

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[9] Clinical Pulmonary Physiology II. Detection of Early Lung Function Changes in Industrial Exposure, H. L. Motley, Industrial Medicine and Surgery, June 1953, vol. 22, pp. 262–267.

[10] Prevention of Silisosis by Metallic Aluminum, J. J. Denny, W. D. Robson, and D. A. Irwin, Canadian Medical Journal, April 1939, vol. 40, pp. 213–228. Referred to in: Silicosis, General Considerations and Survey in the Coeur d'Alene Mining District of Idaho, P. M. Ellis, M. T. Smith, H. E. Bonebrake, and L. B. Hunter, Northwest Medicine, December 1942, vol. 41, pp. 406–412.

[11] (*a*) Aluminum in the Prevention and Treatment of Silicosis, report of the Council on Industrial Health and Council on Pharmacy and Chemistry, JAMA, April 27, 1946, vol. 130, p. 1223. (*b*) Present Status of Aluminum in the Therapy and Prophylaxis of Silicosis, report of Councils on Industrial Health and Pharmacy and Chemistry, JAMA, July 23, 1949, vol. 140, pp. 1024–1029.

[12] Experiences With the Control of Silicosis in the Ceramic Industry, D. L. Perry, AMA Archives of Industrial Health, September 1955, vol. 12, pp. 247–249.

[13] Experiences With the Control of Silicosis in a Foundry, L. H. Osmond, AMA, Archives of Industrial Health, August 1955, vol. 12, pp. 221–225.

to the solution of a problem that otherwise will continue to vex you for a long time to come. Meanwhile, efforts should be made to strengthen the dust-control program and to provide adequate medical supervision and periodic physical examinations for our vital mining population.

TABLE 1.—*Silicosis cases by type of industry, based on 10,152 cases in 20 States, during 1950–54*

Industry	Number of cases	Percent of cases
Mining:		
Coal	4,079	40.2
Metal	1,637	16.1
Mixed and unspecified	854	8.4
Nonmetallic and quarrying	185	1.8
Total, mining	6,755	66.6
Manufacturing:		
Foundries	1,645	16.2
Other manufacturing	1,159	11.4
Total, manufacturing	2,804	27.6
All other and not known	593	5.8
Total	10,152	100.0

TABLE 2.—*Silicosis cases receiving dust exposure after 1935 based on 3,455 cases in 10 States during 1950–54*

Industrial group	Number of cases reported	Cases receiving dust exposure after 1935	
		Number	Percent
Mining:			
Metal	509	80	16
Coal	1,095	77	7
Mixed or unspecified	65	7	11
Nonmetallic and quarrying	146	31	21
Manufacturing:			
Foundries	888	85	10
Other manufacturing	662	56	8
All other, or not known	90		
Total	3,455	344	10

[From the A. M. A. Archives of Industrial Health, October 1956, vol. 14, pp. 379–386]

SOME FACTS ON THE PREVALENCE OF SILICOSIS IN THE UNITED STATES

(Victoria M. Trasko, A. B., Cincinnati)

One of the conclusions reached at the 1955 McIntyre-Saranac Conference on Occupational Chest Disease was that statistics are needed on the incidence of pneumoconioses for the proper evaluation of progress in the control of dust. At this conference the occupational health program of the Public Health Service presented some preliminary statistics[1] indicating that silicosis continues to be a widespread occupational health problem in the United States. This finding has been reaffirmed by an inquiry which we have recently completed on the prevalence of silicosis in the United States. The results of this study will be

[1] Doyle, H. N.; Trasko, V. M.; Gafafer, W. M., and Miller, S. E.: Accomplishments in the Epidemiologic Study of Silicosis in the United States, A. M. A. Arch. Indus. Health 12: 48–55 (July), 1955.

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published in detail this year in a special bulletin which will also cover silicosis in terms of compensation costs and causes of death.

It should be stressed at the outset that our study was based on official records obtained from scattered sources. Since a uniform scheme for compulsory routine examinations of workers in dusty trades does not exist in this country, and since very few studies of the incidence of dust diseases have been carried out in recent years, official records hold forth the only promise of information. When we began this inquiry, we recognized the impracticability of developing evidence of a conclusive nature. But by accumulating data on a sufficiently large number of cases, we hoped to come up with general information on at least four questions:

1. What is the prevalence of silicosis in the United States?
2. What are the characteristics of the silicotic population?
3. Is a significant number of new cases developing among workers entering dusty trades for the first time in the past 20 years?
4. What aspects of the dust problem need further study?

Covering the 5-year period 1950–1954, the study disclosed 10,362 cases of silicosis that have been compensated or reported in one form or another in 22 States. If cases processed by compensation agencies but for various reasons denied benefits are added, the total exceeds 13,000.

Of the 10,362 silicotics whose cases are on record during this period, about 20 percent are dead; 50 percent are totally disabled; and 30 percent are still working, seeking work, or of an unknown status.

SOURCES OF INFORMATION

In our search for quantitative data on silicosis, we wrote to official health or compensation agencies in 26 States believed to have information. We asked for data on individual cases in their records from 1950 through 1954, covering age, sex, years, and places of employment, diagnostic data, and compensation costs when applicable.

The cooperation we received from the States was gratifying. Only 1 of the 26 States did not respond. Three States either had no usable data or could not readily sort out the silicosis from other work-injury cases. Two States provided their own tabulations on age and occupations—one on compensated cases and the other on employer reports. For three States only total number of claims processed could be obtained. Three compensation agencies sent us listings of individual claims processed, and two State health departments sent official medical reports of individual cases containing all or some of the information requested. The sources of information in two States were cases discovered upon routine X-ray examinations of workers in dusty trades.

Several of the other 10 States participating in this study wrote that the information we were requesting was available but not tabulated and that, if we wished to review and abstract the cases ourselves, they would make files available. We accepted these offers and proposed this procedure for other States. In this manner a considerable volume of data, including where and when persons worked, was opened to us, which otherwise would have remained buried in the files. Some of the compensation case files were so voluminous that it often took as much as half an hour to pick out the few personal and occupational facts on a single case from the mass of transcripts of hearings; reports of referees, advisory medical boards, hospitals, physicians, and laboratories; autopsy reports; birth and death certificates; bills; employer reports of wages and hours worked, and correspondence with insurance companies and others.

As might be expected from resorting to such varied sources of information, the data collected are not qualitatively comparable. One of the major and well-recognized shortcomings is the absence of uniformity in classifying stages of silicosis. For this reason the term "silicosis" is intended to cover all stages determined, both medically and legally. Not all agencies concern themselves with noting whether the person also has tuberculosis or, if deceased, with noting the date and causes of death. Occupational information could not always be considered adequate or complete. Where compensation laws require employments for the previous 10 or 15 years, usually this was all that would be recorded. Medical reports and death certificates give the most recent occupation, which is not always the one responsible for causing silicosis. As a result, as analyses become more refined, the number of cases used as a basis becomes smaller.

On the other hand, many records were reviewed that contained extensive clinical, laboratory, and radiographical proof of the disease and, at times, reports

of industrial hygiene investigations of places where the disease may have been contracted. For some workers serial X-ray findings were recorded. As a rule, the purpose of the record and the legal procedures involved in compensation influenced the kind and extent of data kept. However, in the absence of uniform sources of information we accepted what was available and considered ourselves fortunate to get as much as we did.

GEOGRAPHICAL DISTRIBUTION

The geographical distribution of the States participating in the study, as well as the number of cases obtained in each State, is shown in figure 1 (see p. 299). Altogether, 7 States each contributed under 100 cases, 7 States between 100 and 500 cases, and 8 States more than 500. Figures identified by stars indicate that sources of reports were primarily compensation records. The number of cases shown cannot be related to industrial populations within the States because of differing reasons for keeping records on silicosis.

As an example of wide differences in State prevalence figures, attention is called to the figures for Montana and the neighboring Mountain States. These cases refer almost exclusively to hard-rock miners. The 81 cases for Idaho and 40 for Utah represent compensated disabled and death cases filed with the industrial commission. In Montana the 588 cases represent persons receiving silicosis benefits from the State department of welfare for the first time during 1950–54 and deaths among silicotic workers, most of whom began receiving benefits prior to 1950. The requirement for eligibility for benefits in Montana, which is entirely apart from regular compensation, is 10 years' residence and medical evidence of disabling silicosis. The caseload of workers receiving benefits has averaged between 600 and 625 per month over the past 5 years. Thus, the figure shown for Montana, large as it is, does not reveal the real prevalence. It was used only because it represented the number of cases on which we had detailed information.

The figure of 2,153 for Pennsylvania represents workers with silicosis and anthracosilicosis who were awarded compensation benefits during 1949 through 1953. Statistics on deaths and employer reports of silicosis were also obtained although not used. The differences in these three sources of information are illustrated in figure 2. The first series of bars relate to the number of deaths coded to silicosis and anthracosilicosis; the second series are compensated cases, and the third are employer reports made to the department of labor and industry. The black-shaded areas represent deaths and the unshaded, live cases. While the Pennsylvania experience may not be typical, this figure shows strikingly how different sources of information can influence the prevalence figure for silicosis.

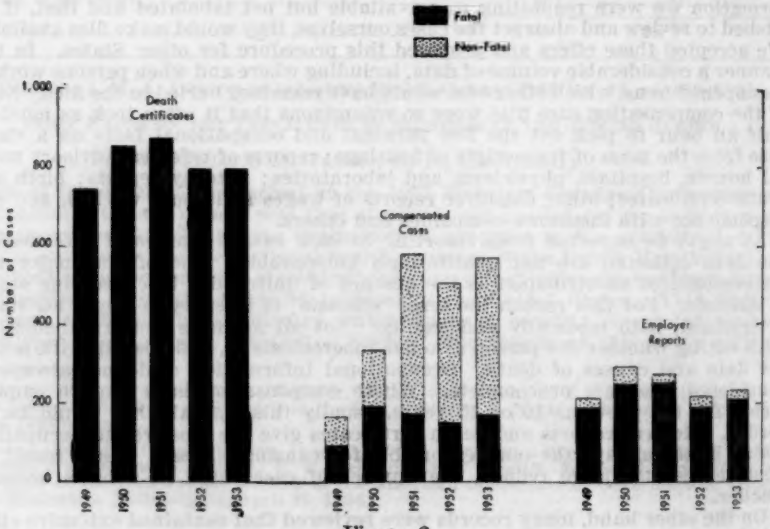

Figure 2

PREVALENCE

As an indication of the prevalence of silicosis in the United States, the 10,362 cases on which we gathered information are obviously an underestimate of the real situation. In the first place, not all States or all potential sources of information within the 22 States participating were canvassed. Secondly, about three-fourths of the cases were obtained from compensation agencies, which because of numerous legal requirements seldom draw all the medically eligible. Since disability for work must usually be evident for compensation purposes, we can assume that the majority of these cases would be unemployed and disabled.

The prevalence figure, then, does not reflect accurately the number of persons still at work who probably have some form of silicosis. This number may be larger than we suspect. Many skilled workers, such as granite cutters and molders, though they know they have silicosis, often prefer to remain at their jobs rather than seek compensation or learn a new trade. Many industries, especially the mines, continue to employ workers with roentgenographic evidence of silicosis as long as they are not seriously disabled.

Moreover, more than 10,000 workers have probably died from occupational lung diseases during 1950–54. According to the National Office of Vital Statistics,[2] such deaths averaged 2,000 annually between 1949 and 1952. Of the cases accumulated for this study, only 20 percent were known to have died during 1950–54.

Despite the paucity and limitations of the data, one cannot deny that 10,362 cases is a sizable number, even if spread out over a 5-year period. Since we have no previous prevalence figures to relate it to or even an adequate estimate of the population at risk to determine rates, we will have to be satisfied with the observation that this is a "lot of silicosis" for these times.

AGE

Using age as one of the characteristics, the data reveal that these cases are primarily an older group. The age distribution, based on 4,814 persons with all stages of silicosis, shows that 2.5 percent (120) were under 35 years of age sometime during the 5-year study period; 21.3 percent (1,025), between 35 and 49 years; 50.6 percent (2,437), between 50 and 64 years, and 25.6 percent (1,232), over 65 years. In other words, three-fourths were over 50 years of age. A number of workers covered in this survey knew that they had silicosis before 1950, but, in general, most of the cases were diagnosed during 1950–54.

Sharp differences occurred in age distributions by States, depending upon the sources of data. In States allowing benefits for temporary or partial disability, records revealed comparatively more workers under 50 years of age with silicosis. For instance, New Jersey had 55 percent under 50 and West Virginia, 35 percent. In Montana, where the reports were of totally disabled persons or of death cases, only 4 percent were under 50 years of age. In Michigan, which supplied medical reports of occupational diseases, 20 percent were under 50. New York's data are not included in the above totals, but the State's own tabulations show that 15 percent of 681 closed cases (disabled) were under 50 years of age. Pennsylvania's data are also excluded, since age distribution is based on employer reports and ages for more than one-half were not known.

These findings, within limitations imposed by the data, support the current opinion that most of the cases of silicosis coming to light at the present time are among older men and represent a residue of old cases. However, these data also show that silicosis is occurring among young men with recent exposures.

INDUSTRY

The industries most likely associated with the production of 10,152 cases of silicosis in 20 States are classified broadly in table 1. This is a frequency distribution of the cases and in no way constitutes an indication of the order of hazardousness of the industries listed. The mining industries produced 6,755, or two-thirds (66.6 percent) of these cases. Coal mining, including both soft and hard, ranked highest with 4,079 cases; metal mining followed with 1,637 cases. They were 854 cases for whom the type of mining was mixed or was not specified. Drillers, muckers, shovelers, and machinemen were the most commonly mentioned specific occupations. Another 185 cases were associated

[2] National Office of Vital Statistics, Public Health Service: Personal communication to the author.

with the extraction and milling of nonmetallic minerals, such as clay, feldspar, and mica, and with tunneling and quarrying operations.

TABLE 1.—*Silicosis cases by type of industry (based on 10,152 cases in 20 States)*

Industry	Number of cases	Percent of cases
Mining:		
Coal mining	4,069	40.2
Metal mining	1,637	16.1
Mixed and unspecified	854	8.4
Nonmetallic mining and quarrying	185	1.8
Total, mining	6,755	66.6
Manufacturing:		
Tile and clay	150	1.5
Potteries	257	2.5
Glass	13	.1
Stone cutting and finishing	485	4.8
Nonmetallic mineral industries	165	1.6
Foundries	1,645	16.2
Silica-brick-furnace work	89	.9
Total, manufacturing	2,804	27.6
All other and not known	593	5.8
All industries	10,152	100.0

Manufacturing industries with silica hazards accounted for 27.6 percent, or 2,804 cases. Foundries ranked highest with 1,645 cases (16.2 percent), about one-half of whom were molders. There were 485 cases among granite cutters and finishers, 257 cases among pottery workers, 150 cases among clay-and-tile workers, 165 cases among workers engaged in manufacturing abrasives, the processing of silica flour, mica, and numerous other nonmetallic mineral products, and 89 cases among silica-brick-furnace dismantlers and repairmen. The occupations for 593 workers (5.8 percent) either were not known or could not be readily classified.

The age distribution for industry groups was determined for 4,814 cases and is shown in table 2. Excluding the group of 11 glassworkers, silicosis was found among individuals under 35 years of age in each industry group listed. However, none exceeded 5.9 percent of its total. The 50- to 64-year-old group accounted for most cases within each industry as well as for all industries combined.

Proportionately, nonmetallic mining and quarrying and the nonmetallic mineral industries produced more silicosis among workers under 50 years of age. Numerically, more cases among workers under 35 as well as under 50 years of age were found in the mining industries and foundries.

From these facts we can conclude that silicosis is still associated with a wide variety of industries. If the occurrence of silicosis among young men can be regarded as a criterion, no industry can take credit for complete dust control. However, it should be pointed out that the classified industries do not always represent the most recent place of employment. This was particularly noted in cases from Michigan, Connecticut, Missouri, Oklahoma, and Montana where other than compensation records were used for the determination of prevalence. Hundreds of workers whose cases were reviewed left the dusty trades prior to 1950 and were employed at other jobs when silicosis manifested itself. To illustrate, figure 3 shows the correlation between number of years worked and year last worked in mines for 250 Tri-State (Oklahoma, Kansas, and Missouri) lead and zinc miners who were hospitalized or were out-patients at a hospital in Jasper County, Mo. All these cases were on record as having silicosis or silicotuberculosis sometime during 1950–54. According to recorded data all but 63 had left the mines before 1950; 42 had quit by 1930.

TABLE 2.—*Age distribution of silicosis cases by industry (based on 4,814 cases in 17 States)*

Industry	Number of cases					Percent of cases				
	Total	Under 35	35–49	50–64	65 and over	Total	Under 35	35–49	50–64	65 and over
Mining:										
Metal mining	1,637	56	278	764	539	100.0	3.4	17.0	46.7	32.9
Coal mining	1,129	18	334	02	175	100.0	1.6	29.6	53.3	15.5
Mixed and not specified	67	3	12	39	13	100.0	4.5	17.9	58.2	19.4
Nonmetallic mining and quarrying	153	5	66	69	13	100.0	.3	43.2	45.0	8.5
Manufacturing:										
Tile and clay	68	4	16	35	13	100.0	5.9	23.5	51.5	19.1
Potteries	149	1	21	63	64	100.0	.7	14.1	42.3	42.9
Glass	11	0	2	6	3	100.0	0	18.2	54.5	27.3
Stone cutting and finishing	126	1	35	53	37	100.0	.8	27.8	42.0	29.4
Nonmetallic mineral industries	119	7	30	64	18	100.0	5.9	25.2	53.8	15.1
Foundries	1,119	16	187	629	287	100.0	1.4	16.7	56.2	25.7
Silica-brick-furnace work	67	3	8	34	22	100.0	4.5	11.9	50.8	32.8
All other and not known	169	6	36	79	48	100.0	3.6	21.3	46.7	28.4
Total	4,814	120	1,025	2,437	1,232	100.0	2.5	21.3	50.6	25.6

Compensation agencies, recognizing this problem of multiplicity and changes in occupations, follow the practice of assigning liability to the most recent place of employment with a silicosis risk. When the worker remains at the same place or even at the same kind of employment for his entire life (and many workers, including coal miners, molders, and granite workers, do this), there is no problem in determining the responsible occupation or industry. But large numbers of workers found with silicosis seldom stay at one job or place, particularly when the work is dusty or they are beginning to feel the effects of too much dust on the lungs.

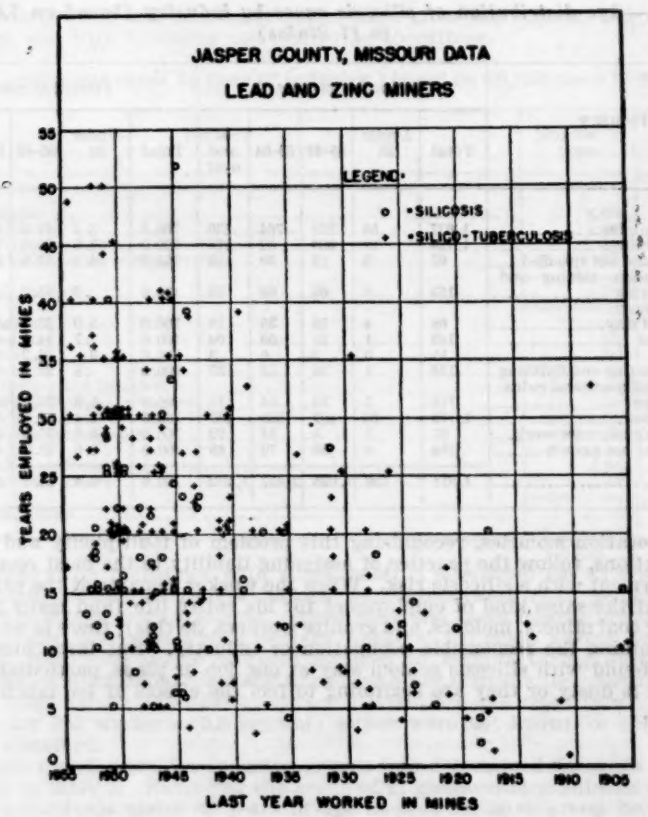

Figure 3

Metal miners are especially migratory, and their length of employment is recorded as being off and on. An example of the work history of a California metal miner, aged 59 in 1953, with moderately advanced silicosis is presented in the following tabulation:

Age 59 in 1953—Moderately advanced silicosis

State	Type of work	Years
Minnesota	Iron mines	1914–17.
Idaho	Lead and zinc mines	1918–19.
Utah	Coal mines	1920–24.
Do	Silver and lead mines	6 or 7 months in 1925.
California	Built house	
Arizona	Copper mine	1927–29.
Nevada	Lead and zinc mines	1929–30.
Arizona	Copper mine	1931–33.
California	Tunneling	1941.
Washington	Road blasting	1941.
Nevada	Mines	1942.
California	Granite quarry	1943.

No work since 1943.
Compromise settlement of $3,500.

Another instance of migration was revealed by the analyses of reports submitted by Michigan. Of the total 722 cases reported during 1950–54, 321, or 45 percent had worked in coal mines of Pennsylvania, West Virginia, Alabama, and

other States where some, no doubt, contracted the disease before migrating to Michigan in search of other work. About 20 were working in Michigan foundries; most of the others were employed at nondusty occupations when their conditions were reported.

SILICOSIS AMONG WORKERS EXPOSED TO DUST SINCE 1935

Information on the third question—"Is a significant number of new cases developing among workers entering dusty trades for the first time in the past 20 years?"—is based on the analysis of 3,455 cases in 10 States for whom reasonably adequate employment histories were obtained. Of this number, 344 workers, or 10 percent, allegedly received their entire dust exposure after 1935, or sometime during the past 20 years. Persons who began working in the early thirties and overlapped this period were not counted in these figures.

TABLE 3.—*Silicosis cases receiving dust exposure after 1935 (based on 3,455 cases in 10 States)*

Industrial group	Number of cases on record	Cases receiving dust exposure after 1935	
		Number	Percent
Mining:			
Metal mining	509	80	16.0
Coal mining	1,095	77	7.0
Mixed or not specified	65	7	11.0
Nonmetallic mining and quarrying	146	31	21.0
Manufacturing:			
Tile and clay	46	9	20.0
Potteries	130	3	2.0
Glass	11	0	0.0
Stone cutting and finishing	323	7	2.0
Nonmetallic mineral industries	87	28	32.0
Foundries	888	85	10.0
Silica-brick-furnace work	65	9	14.0
All other or not known	90	8	9.0
Total	3,455	344	10.0

The distribution of 3,455 cases by industry is shown in table 3. The two groups with the largest proportion of cases receiving total dust exposure in the past 20 years were nonmetallic mineral industries, with 32 percent, and nonmetallic mining and quarrying, with 21 percent. It was shown earlier that these two groups had the greater proportion of younger workers. On the other hand, the number of cases in these groups is comparatively small; so it is hard to tell what significance should be placed on this finding. Tile and clay workers, with 20 percent, are also a numerically small group. The proportion for metal mining was 16 percent, for silica brick furnace work, 14 percent; for foundries, 10 percent; and for coal mining, 7 percent.

Cases were found with less than 5 years of exposure, but, in general, the exposure period averaged about 15 years. The circumstances giving rise to the occurrence of these cases will be discussed more fully in the final report.

SILICOSIS WITH TUBERCULOSIS

Preliminary tabulation of data collected on 2,746 cases in 11 States, for whom tuberculosis when present was recorded, shows that 35 percent also had tuberculosis. It was diagnosed in 33 percent of the 1,763 persons who were alive at the time of the latest record. Forty-nine percent of the 983 persons who had died during the study period were found to have tuberculosis. No other observations can be made at this time, as this aspect of the problem has not been explored.

CONCLUSIONS

Our fourth question, What aspects of the dust problem need further study? cannot be answered from a study of records, such as this, except in a general way. Our findings indicate that silicosis continues to be an occupational disease of considerable importance. From the standpoint of dust control the silicosis

problem appears to be largely the result of exposures prior to 1935, but not completely so. Sufficient evidence was uncovered to suggest that either the application of dust-control measures is not universal or other factors are involved. We know this because silicosis is developing among younger men with recent and short exposure to dust. In addition, we must consider that with less severe exposure silicosis may take longer to develop than in the past, a possibility that cannot be determined for some years.

The findings also suggest that silicosis is a serious social and economic problem. Over the past 5 years the number of compensation claims for silicosis has been increasing. Liberalization of compensation laws and improved diagnoses have undoubtedly influenced this situation. For instance, in West Virginia, the number of claims filed increased from 447 in 1951 to 931 in 1954; in New Jersey, from 18 in 1950 to 135 in 1954; in Alabama, from 117 in fiscal 1952 to 298 in fiscal 1955.

Moreover, the silicotic is living longer. Medical progress in general and the gradual adoption of preventive control measures, which have minimized the severity of exposures among men continuing in dusty occupations, have probably contributed to the longevity of the silicotic. The result is that the number of older people seeking financial assistance through compensation or other means is rising.

There are unknown numbers of persons disabled from silicosis who cannot meet the eligibility requirements for workmen's compensation and who become community responsibilities in one way or another. Presumably the silicotic population will become stabilized as the previously exposed workers die. Our present silicotic population exemplifies the tremendous impact on society of a preventable but uncontrolled occupational disease.

This inquiry into the prevalence of silicosis has revealed, among other things, the need for better reporting of facts on diagnosed cases of silicosis, uniform classification of diagnostic terminology, criteria of disability, and standards for the supervised employment of nondisabled silicotics.

In the absence of previous prevalence data of any kind on silicosis in the United States, it is hoped that the final report will provide a baseline for future evaluations of the occurrence of silicosis. There is little doubt that silicosis will continue to be a problem of industrial, social, and economic significance for many years to come.

(This study was aided by the contributions of workmen's compensation, health, and other agencies.)

Mr. DOYLE. Here are several publications which are typical of the types of studies that the Public Health Service undertakes. I should like to leave these as a part of the file for the committee's reference.

Mr. METCALF. Unless there is objection, they will be incorporated in the file, and the titles of the publications will be listed at this point.

(The titles are as follows:)

Public Health Bulletin No. 277, Health and Working Environment of Nonferrous Metal Mine Workers

Public Health Bulletin No. 250, Pneumoconiosis Among Mica and Pegmatite Workers

Public Health Bulletin No. 241, A Study of Asbestosis in the Asbestos Textile Industry

Public Health Service Publication No. 31, Health of Ferrous Foundrymen in Illinois.

Public Health Bulletin No. 270, Soft Coal Miners Health and Working Environment

Public Health Bibliography Series No. 9, Bibliography of Occupational Health

Mr. METCALF. I want to thank you very much for your testimony, and for your appearance here.

Mr. DOYLE. Thank you.

Dr. FLINN. Thank you, sir.

Mr. METCALF. The next witness is Mr. Joseph McDonald, legislative representative of United Steel Workers.

We will skip over Mr. McDonald and call Mr. George D. Reilly, who is representing the AFL–CIO.

We welcome you before the committee again, Mr. Reilly, and you may proceed as you see fit.

STATEMENT OF GEORGE D. REILLY, LEGISLATIVE REPRESENTATIVE OF THE AMERICAN FEDERATION OF LABOR AND CONGRESS OF INDUSTRIAL ORGANIZATIONS

Mr. REILLY. My name is George D. Reilly, Mr. Chairman and gentlemen. I am legislative representative for the American Federation of Labor and Congress of Industrial Organizations.

At the outset, I would like to compliment the selection of the personnel of this subcommittee. I think that I know each of you individually. I have met you and talked to you from time to time, and Mr. Elliott comes from a State with mines, and I once had the privilege of living in that State.

I have seen hundreds of bodies brought up out of coal mines, disfigured beyond recognition. Since this committee several years ago had the foresight to pass the coal mine safety bill, my memory seems to serve me well when I can't recall any catastrophe in coal mines. There have been the usual number of individual accidents, and I suppose there will continue to be as long as mining is an industry. But we took a leading part in getting that legislation through the Halls of Congress, and I believe that this committee can well take a bow on its foresightedness in getting that legislation through.

This bill, I think, was brought to the attention and in fact I know it was, to the full committee, and the subcommittee, the importance of it to the end that arrangements were made through the chairman and the ranking members and through the various members of the subcommittee to give your help during this recess and this adjournment time, so that you can come up with a well-considered bill in leisure, and having something as I understand you plan to have it for the early days of the new Congress.

With that running start, I feel greatly confident that this committee is going to be responsible for a well-considered and well-rounded out piece of legislation that is going to save life and limb.

Those who opposed the passage of the coal-and-mine safety bill at the time had various reasons, and I would like to refer to them as excuses, but I would give those who did oppose the benefit of good faith and say they did it because of their own good and sufficient reasons. After the passage of that law, and after it had time to work and take hold, my information is that some of the most ardent opponents of that legislation came to be the most ardent supporters of it, because they found that it was in the interest of humanity, and that the dollar sign was not ahead of the good cause of saving human life.

Today you have a new element in the industry of mining. You have uranium and you have other raw ores from which are derived new forces of energy. It seems to me that you are on the threshold of setting your benchmarks for safety in an industry that is coming into its own fast, as well as setting benchmarks even though belatedly in the other phases of the mining industry.

This is a temperate bill, of these several bills I must give credit to each one who has introduced a bill here, because they are all for

the same good common purpose. These bills are all temperate. There is no shotgunning or ramrodding in this thing. It seems to me there is a great deal of voluntary effort involved in it. For that reason again I want to compliment the subcommittee, committee, and the sponsors, and the introducers of these bills for the temperate manner in which the whole proceeding is being conducted here.

When the news of your action is well circulated, and I hope it will get circulated before the year is out, I think that the spirit of Christmas and the lights and the bells will be brighter than ever, because I believe that your action will go far toward preserving life, lengthening it and preventing dismemberment of wage earners.

I see no need of going into the merits of this legislation on my part, Mr. Chairman, because the steel workers are well equipped to discuss that in detail. They live with this thing all the time. I do want to say that we heartily add our stamp of approval and endorsement to this legislation, and hope that there are no material changes in the bill which you see fit to report out.

Mr. METCALF. Thank you very much for that statement, Mr. Reilly. As you have pointed out, the ranking Democratic member of this committee, Mr. Kelly, is the sponsor of the principal bill, and the ranking minority member, Mr. McConnell, is also the sponsor of an almost identical bill, and the chairman of the whole Committee on Education and Labor has asked this subcommittee to take this recess action. So it is not only the members of this subcommittee, but of the whole Committee of Education and Labor that are interested and concerned with this problem. I assure you that we are going to try to make as thorough a study and as strong a recommendation as is possible as a result of these hearings.

Mr. REILLY. It is a fine project you are working on.

Mr. METCALF. Are there any questions? Thank you, Mr. Reilly, for your very fine statement.

Mr. REILLY. Thank you.

Mr. METCALF. The next witness is Mr. Frank Burke, director of safety and health of the United Steelworkers.

STATEMENT OF FRANK BURKE, DIRECTOR OF SAFETY AND HEALTH OF THE UNITED STEELWORKERS OF AMERICA, AFL–CIO ACCOMPANIED BY JOSEPH E. GONEY, ASSISTANT DIRECTOR OF SAFETY AND HEALTH; GEORGE ELLIOTT, A STAFF REPRESENTATIVE FROM BIRMINGHAM, ALA.; MR. McDANIEL, A STAFF REPRESENTATIVE FROM BIRMINGHAM, ALA.; AND ALEX CHRISTIE, OF THE LEGISLATIVE DEPARTMENT OF THE WASHINGTON OFFICE OF THE UNITED STEELWORKERS OF AMERICA, AFL–CIO

Mr. BURKE. This is my assistant, Joseph Goney, and Mr. George Elliott, from Birmingham, Ala., a staff representative, and Mr. Alex Christie, from our Washington headquarters legislative department, and Mr. McDaniel from Birmingham, Ala.

Mr. METCALF. Would you proceed in any way you would like to proceed.

Mr. BURKE. With your permission, I would like to go into some of the matters that the representatives of the Occupational Health

Division of the Federal Security went into this morning and this afternoon. I would just like to have some points cleared up.

I know Dr. Doyle and I know Mr. Johnson from the Bureau of Mines. I just had the pleasure of meeting Dr. Flinn. I have worked with the former assistant chief of what was then known as the industrial hygiene division, Mr. Jack Bloomfield, and later on Dr. Miller, and the Surgeon General, Dr. Scheele.

I tell you these things to acquaint you with my experiences in the matters that are under your consideration.

Dr. Doyle should be asked whether or not the epidemiology surveys that are made of individuals are correct in every instance of an individual. His findings, do they pertain to every miner, or do they strike an average, or do I understand the pathological setup of the human being as being different. Maybe you as a miner can take more of these particles that he spoke of than I can. Will the exposure that I am exposed to of silica affect me quicker than it will you? What are we dealing with? Are they figures or human beings?

You are dealing with human beings, and so am I. That is who I represent. I have no statistics, and I have no charts, and I have nothing but cold facts.

The other question on the matter of silicosis, are we talking of silicosis in mines, metal and nonmetal mines, or are we talking of silicosis in a general sense?

I may not have been listening very closely. I thought that I had my ears pricked up as high as the ceiling, but I may have missed it, but it appeared to me from what I heard that the testimony he made was in a general sense. If that is true, Dr. Doyle knows that we had a survey made by representatives of his division, and Ken Morris, the former head of the industrial hygiene division of the State of Illinois, made in East St. Louis some years ago, and found plenty of cases of former silicotics. Yes; they were in cemeteries and in sanitariums and on the streets.

In the city of Salt Lake, I don't know whether Dr. Doyle knows this or not, but he should, since it pertains to silicosis, but a general from the War Manpower Commission during the Second World War was sent to Salt Lake City to make a survey of manpower in that area, because the mining operators refused to hire men whose chest X-rays showed spots of silicosis. They were young men, and I am not talking of men of 55 or 65 or 70 years of age. I am talking about young men.

I would say to you gentlemen that many of them are still walking the streets in Salt Lake unless they have moved somewhere else to get out of that area so that they could earn a living for their families.

The charts showing the States—has it been explained to you gentlemen that there in the mines as in the mills you meet with an accident, whether it be an occupational disease or a trauma, and if they can get you into that mine your case is not recorded as a lost-time accident, an industrial commission does not know about your case. Did that chart show that?

May I, Mr. Chairman, refer to the chart?

Mr. METCALF. If you want to refer to the chart, you may.

Mr. BURKE. Does this chart tell you gentlemen what I have just said?

Mr. RHODES. I think that Dr. Doyle did explain in answer to a question that it referred to people—it was not Mr. Doyle, but it was Dr. Johnson—that his figures referred to people who had been off work for at least 1 day.

Mr. BURKE. I missed that, sir.

Mr. RHODES. Mr. Johnson said that his figures referred to people who have been off work for 1 day. That is 1 day or more.

Mr. BURKE. For silicosis?

Mr. RHODES. Maybe we are talking about two different things, but I understood you to say that was not clear.

Mr. BURKE. It says States participating in silicosis prevalence study, 1950 to 1954.

Mr. RHODES. I thought you were referring to Mr. Johnson.

Mr. BURKE. I threw trauma in because of the principle that I am talking about.

Mr. RHODES. That was the point I wanted to make.

Mr. METCALF. Mr. Burke, I think we all got from Mr. Doyle's testimony that his department had made this survey and that according to the prevalence study, for instance, in Idaho, they had no way of knowing how many people might have drawn compensation from private insurers.

Mr. BURKE. I accept that.

Mr. METCALF. In Montana, they have no way of knowing what the prevalence of silicosis is because the only report they had was from the public welfare agency. I think the questioning did bring out that we don't know how many people in the United States are in the first stage of silicosis, and as you say are walking the streets and may be disabled in part. That is one of the things that we probably need more research to find out.

Mr. Elliott suggested perhaps appropriations are needed for that.

Mr. BURKE. The point I was driving at, Mr. Chairman and gentlemen, was this, that I do not want the committee to be under any illusions even with Dr. Doyle's statement. I am not questioning his statement, because he has to depend on another party to get what he showed you. I am bringing you some basic facts when I say if they can get you into the mine by means of what we call a jitney, that is a company car, the foreman will punch your timecard, and all you will do is sit on the properties of that operator, the same as they do in a mill. In other words, the boys kid about it as long as you are breathing, Burke, you are in, and your case is not recorded.

The State, whether it be the department of labor or the industrial commission, has no record and neither does the insurance company, because they don't want them to know about it, either. Otherwise, their rates will go up. I wanted to cover that point.

Now, there is one other point on silicosis. I do not recall Dr. Doyle mentioning how about those near-misses, those cases where the fellow is not to the point of partial disability or total disability, and is out of the industry. I have found them in Pittsburgh. Dr. Alexander showed me X-ray pictures of men, dishwashers, old men who were getting jobs as dishwashers in restaurants and hotels. When we had our chest X-ray drive on, that came out. They had not worked—he had their background and he had their history—and they had not worked in a mine for years.

Now, the point I make there is that there is a possibility or isn't it practicable to believe that young people who have been injected or have been disabled, but not to the point of partial disability and have left the industry and gone somewhere else—these charts don't show that.

Now, I have one other point.

Mr. RHODES. Why should they show it, if there has been no partial disability?

Mr. BURKE. Well, sir, what I am dealing with is this: I want to prove that there is a lot of silicosis in this country. That is the purpose of the bills that we are supporting. So if you people plus the Bureau of Mines will see that, you will get that information.

Mr. RHODES. I have had several chest X-rays, and it shows I had a childhood form of tuberculosis at one time or another, and I did not know it, and it does not bother me. I get insurance and everything else. Isn't that fairly analogous to the case of somebody who might have gotten silicosis if he stayed where he was, but he did not stay and so he didn't get it?

Mr. BURKE. Fortunately for him that may be true. I am trying to prove that there are many cases that we don't know of, you see. What we are trying to do is stop that.

Mr. RHODES. You had better define a case. What is a case?

Mr. BURKE. A silicotic, but according to the laws of the States, they are not silicotics unless they are partially disabled or totally disabled. You are not a silicotic, but companies say that you are silicotic, such as that one in Salt Lake City that I described to you. To them you are a silicotic. Our subarea director, George Haycook, is a silicot.

Mr. RHODES. Do you have any way of knowing the number of people who were denied employment because they have some trouble like that?

Mr. BURKE. You probably could get it from the Manpower Commission. Maybe George could give me some information that I could pass on to the chairman, and then maybe you fellows could get it from the War Manpower Commission. I did not get into that. My business is strictly accident prevention and health.

Mr. RHODES. I am just trying to determine how rough a problem we have. That is whether we are dealing with 5 men a year or dealing with 1,000 men a year, or 5,000, or what.

Mr. BURKE. Congressman Rhodes, listening to testimony this morning, so help me God, I did not know why I had to come to Washington. Believe me, I am not being funny, sir. I am very serious about this. I was back there in half a dozen seats, as I listened to Johnson. I have known Johnson for a long time. He knows me. I was surprised to hear testimony coming from governmental agencies. They have known me since 1948 and 1949. I started on silicosis originally when I was sent to Timmons, Ontario, to the second largest gold mine in the world, belonging to the McIntyre interests. I immediately came from Timmons, Ontario, in February, and I went right down to Jack Bloomfield's office and inquired about alumina therapy, where they were feeding through pipes this alumina dust to the gold miners, to cure them of silicosis.

Dr. Doyle knows better, and he knows that. He knows that a lung, like this joint on my finger here, once it is gone, nature has not provided for the end to grow back again. Once the lung is gone, or the lungs are gone, that is it. That portion of the lung does not grow back again. But still the McIntyre interests, their chief doctor invented this powder, and it is sold right here in the United States under a royalty. Mining companies are using it and foundries are using it in this country to do what? It is to prevent miners from getting silicosis. That was the reason for my visit to the Industrial Hygiene Division of the Federal Security Agency, to find out what is this alumina therapy they are giving these miners up there.

I checked with Dr. Boyd, Jim Boyd, who is head of the Bureau of Mines, and Jim said, "Frank, that is something that you and your people had better not monkey around with."

I was sent to the American Medical Association in Chicago for further information on alumina therapy, and I received booklets. There was a panel set up by the American Medical Association, headed by Dr. Peterson, now deceased. He was head of the industrial division for the AMA. They stated in that pamphlet that as of this day Dr. Lonzo, an authority on silicosis in New York City, a man in his seventies, they said, "Frank, don't go for it. It is no good. It cannot cure or prevent silicosis. The only thing that can cure silicosis is to keep the men in a clean area."

I have gone through this, and I do not want to take all of your time, and I am trying to give you as much of the highlights of our experience as possible.

There is one other point, and then I will get to my own testimony.

Mr. METCALF. Would you tell us your experience about how many of the companies, the mining companies, require a physical examination and chest X-ray before hiring?

Mr. BURKE. I would say, sir, in the West, almost all of them. They are trying to catch silicotics so that they are not responsible.

Mr. METCALF. The point that you are trying to underscore for the committee is that if they catch them in the first or second stages of silicosis they refuse to hire them even though they would not be eligible for compensation.

Mr. BURKE. If the case was such as Congressman Rhodes mentioned, if there was a bit of doubt in their doctor's mind that it was silicosis, he would not get a job with them.

Mr. METCALF. Even though it was not compensable under the Workmen's Compensation Act or any other legislation?

Mr. BURKE. Regardless, with or without. I have further proof as to what is going on in this country, and I will submit that as evidence to the committee.

Mr. FJARE. Did you say all of the companies do?

Mr. BURKE. I said almost all of them do.

Now, the next important thing in Dr. Doyle's testimony, and I would like to be corrected if I heard him incorrectly, was this: I believe it was Congressman Elliott that asked either Dr. Flinn or Dr. Doyle about the appropriations. I heard a figure of $10,000 mentioned by Dr. Doyle. Was that $10,000 for 1950 to 1954? I did not hear him saying yes.

Mr. RHODES. He did not testify that there was an appropriation. He said they had taken it out of their regular funds, and I do not recall what that covered.

Mr. BURKE. Congressman Elliott asked him how much.

Mr. ELLIOTT. He said it cost $10,000 to make this study covering the years 1950 to 1954.

Mr. BURKE. In other words, the $10,000 was for from 1950 to 1954.

Mr. ELLIOTT. It was for this particular study, as I understood it, which covered the years 1950 to 1954.

Mr. BURKE. Gentlemen, that is $10,000. Even from 1950 to 1954, where would the Division go with $10,000. I asked for $500,000 from the Congress, and the Senate, to give to them to investigate air pollution in this country after our tragedy in Denorrah, Pa., in October of 1949. I consider silicosis more dangerous to this country and its citizens than that. I consider silicosis more dangerous than air pollution.

I asked for $500,000 for that problem alone. Where would $10,000 get the Division? It would cost them that much to haul their equipment around the country, just to ship it. If they had to go to Butte, or if they had to go to Salt Lake City today, where we are mining cobalt and uranium, it would cost that.

Of course, they are not large operations. They are small pockets. But, nevertheless, they are the lifeblood of the security of this Nation even if they are small pockets, and valuable manpower is needed to uncover them, and to mine that ore; $10,000, being sarcastic, gentlemen, would not get you across the street in 4 years. I know the equipment they have to have. I have seen the equipment moved to Denorrah to make the air pollution tests, and they have to take over a whole building to install their equipment. I am sure Mr. Johnson and Dr. Doyle knew they were going to get this from me. They knew that I have been hotter than a firecracker on this silicosis thing for years. If they did not, their division heads did.

I would like, Mr. Chairman, now to go to my statement.

Mr. Chairman, I have read the testimony taken by the subcommittee during its recent hearings in the field. While I am not in disagreement with the statements made by some of the witnesses before your subcommittee, I believe that a foundation has been laid upon which your subcommittee can report favorably to the Committee on Education and Labor as to why the mine safety bill or bills under consideration by your subcommittee should be enacted into legislation.

I fully realize that the 84th Congress as of December 31, 1956, will no longer be in existence. If anything is to be done as far as these bills are concerned, it will have to be accomplished by the members of this subcommittee and the full Committee on Education and Labor.

This subcommittee has rendered a contribution toward mine safety in that a record has been made. The 85th Congress, if it so wills, can take this record and enact this mine safety legislation into law.

The United Steelworkers of America represents over 30,000 miners who are directly engaged in metallic and nonmetallic mining.

As the chairman of this subcommittee knows, I am keenly disappointed that the subcommittee did not go into the copper mines of the Upper Peninsula of Michigan and the Birmingham area in Alabama where the United Steelworkers of America, AFL–CIO has substantial membership and where, I regret to state, that safety conditions

in these regions leave much to be desired. I must, in all fairness to myself and to the men in these regions, and to the United Steelworkers of America, emphasize my keen disappointment in the failure of your subcommittee to hold hearings in this region.

Your committee has held these on-the-spot hearings to gain needed data and information. Had the subcommittee held hearings in upper Michigan and Birmingham, Ala., as I had been led to believe they would, the data gathered would increase your knowledge and all concerned as to the need for the mine safety bill before the subcommittee.

The United Steelworkers of America have long sought to attain the objectives of the present mine safety bills. It has taken us years to have a subcommittee set up to look into this matter of mine safety. The United Steelworkers of America have spent a sum of money in attempting to get this bill introduced and the subcommittee functioning.

Might I say right there, gentlemen, in that paragraph I mean this: I had talked to Dr. Boyd. There was a vacancy in his office when he resigned in 1951. Then Jack Forbes was appointed to the job, and he is now retired. I talked then about a mine safety bill for our metal miners. They encouraged me and I have been fighting ever since. That was a year before Dr. Boyd resigned. Proof that I speak of the truth is that I have here two reports that I spoke to the chairman about, and I only have these two. I have tried from the Bureau of Mines a year ago to get duplicate copies of reports 1 and 2 of rock blasts in the Upper Peninsula of Michigan. I was unsuccessful.

I would like to present these two copies, and I would appreciate it if the chairman would see that I get them back. I would like to read into the record, Mr. Chairman and gentlemen, their headings, and then I will give them to your staff member.

It is dated August 24, 1951, United States Department of the Interior, Bureau of Mines, Progress Report–Rock Burst Investigation, Calumet & Hecla Consolidated Mining Co., Calumet, Mich., Report No. E13.1.

The second one is dated January 1952, Applied Physics Branch, Minerals-Technology Division, Bureau of Mines, Progress Report No. 2, Rock Burst Investigation, Calumet & Hecla Consolidated Copper Co., Calumet, Mich., Report No. E13.2.

That gives you an idea, gentlemen, how long the United Steelworkers have been trying to get a mine safety bill. We had the Bureau of Mines physicists from out at College Park, Maryland University, I believe, go up there and make a study of these rock blasts, to give you an idea, gentlemen, what I am talking about.

Miners are working on the face of a mine, on hard rock. That is fifteen or sixteen thousand feet below the surface. They are drilling holes, and there is pressure and the rock busts, and it explodes in their faces, and occasionally if they are not fast enough, it catches one of them, and then we have a fatality.

Mr. RHODES. How far below the surface did you say?

Mr. BURKE. I was guessing when I would say about fifteen or sixteen thousand feet. I could be wrong. The reports will state it. If you would care to, I can strike that figure out of the record.

Mr. RHODES. I do not care. It is your figure, and I just wanted to make sure you were right.

Mr. BURKE. The sum of money I spoke about is a sum of money my organization spent on staffmen and local union people gathering up data and traveling around to get the information because mine inspectors are not right in the mining camp, you know. We have to go to them.

I will say this for Mr. Johnson, that whenever I wanted a mining report, I got it. He mailed a copy to me. But I can't say that for all of them. Our people would have to go to them.

To continue with my report or statement, I am not here to claim any false credit for the United Steelworkers, but I believe that the best interests of all parties will be served by stating here and now that it was due largely to the efforts of the United Steelworkers that the present bills were introduced in both the Senate and the House. It was due to the persistent effort of the AFL–CIO legislative department, the United Mine Workers and Steelworkers that you gentlemen are now holding these hearings. There is nothing stronger than the facts. I know the subcommittee would not want the record to be clouded as to the facts.

I have been engaged in safety work for the last 35 years. If there is any doubt in your mind, I started in a mill when I was 11. I am only 49, and so I told the boys when you put that in there, they will ask how old I am. But that is how long I have been going at it, until I resigned as international board member in my organization, and Philip Murray, the president then, appointed me as director of safety and health. Those are my duties.

If there is one point I would like to emphasize with this subcommittee, it is the fact that the various States have failed to enact adequate safety codes to protect the miners who work in metallic and nonmetallic mines. I have found that these State codes suffer from the lack of adequate appropriations, trained competent men, with civil-service status, and the inevitable State politics that creep into the State government bureaus and agencies.

A typical example of our experience when we present bills to State legislatures took place in February of 1952 when we supported House bill 122 in the Michigan Legislature which would have provided for appointment of mine inspectors for copper and iron-ore mines with civil-service coverage, and the establishment of a committee to promulgate safety codes, rules, and regulations for those mines. The committee of State affairs for the Michigan Legislature defeated this bill by a vote of 6 to 3. It appears to me that when it comes to protecting the safety and health of the greatest assets this Nation has, meaning, of course, its manpower, too many put economic interests above the Nation's welfare and security.

I would like to throw in right there that the State of New Jersey, just a year ago, did pass a mine-safety bill.

Voluntary cooperation between labor and management is an ideal. The program we are faced with here is not cooperation between labor and management, but information and the obtaining of adequate data, which the Bureau of Mines does not have at the present time, nor for that matter neither does the Department of Labor. Therefore, based on the record and on the testimony and evidence presented to this subcommittee, it seems to me that voluntary cooperation is not only inadequate, but a complete failure and must be supplemented and made workable by modern and comprehensive Federal legislation.

Right there, gentleman, I have asked for years of the United States Labor Department for data on iron-ore miners, copper miners, and they have nothing. I have asked the Bureau of Mines irrespective of what we heard this morning. I have asked them for data. That is the Federal Government, the Bureau of Mines, and I have asked them for data on iron-ore miners and copper miners. They told me that they have nothing.

In fact, gentlemen, I am lucky even to get information from States on mill accidents, steel-mill accidents, and fabricating-shop accidents, because they say it is not the law. They cannot give us that information.

The enactment of this bill into legislation will be a long-needed step toward the type of law that is necessary to cope with this situation on a nationwide basis.

There is a statement by Ben Moreell, chairman of the board, Jones & Laughlin Steel Corp., October 24, 1956, Chicago, Ill., delivered to the National Safety Congress:

> During the past 10 years (1946 to date) the records indicate that for all units of our corporation, comprising approximately 43,000 employees, the injury frequency rate has been reduced by 60 percent. Similarly, the injury severity rate is now slightly less than half what it was 10 years ago. When these cold statistics are translated into terms of lives and limbs of a working force of 43,000, it can be seen that we have much reason to be encouraged—but not to be complacent. For I believe that even 1 injury, even in a working force of 43,000, is 1 too many.
>
> Our wire-rope manufacturing division, with 285 employees, worked a total of 3,574,631 man-hours from January 21, 1949, to July 1, 1956, or better than 7 years, without a disabling injury, and received the award of honor from the National Safety Council. Our coordinator of safety and welfare, in his official report, attributed this achievement to "the degree of coopreation existing within the labor-management safety committee."
>
> During 1955 our coal mines were awarded four Joseph A. Holmes Safety Association awards. Our Vesta No. 4 mine broke the world record by producing 9,112,851 tons over a period of 59 months, and with an exposure of 10,057,026 man-hours without a fatality. The previous record was 6,770,000 tons.
>
> A few years ago I wrote a letter to the employees of our corporation on the subject of safety. Among other statements was the following:
>
> "Although the establishment of safe and healthful working conditions can be justified on a cold dollar-and-cents basis, I prefer to justify it on the basic principle that it is the right thing to do.
>
> "In discussing safety in industrial operations I have frequently heard it stated that the cost of adequate health and safety measures would be prohibitive and that 'we can't afford it.' My answer to that is quite simple and direct. It is this: 'If we can't afford safety, we can't afford to be in business.'
>
> "This still represents our management's firm conviction. And I am sure that

I have copies to submit to the committee of this statement.

I read that to you gentlemen for the latter part there, because Jones & Laughlin has coal mines and they have captive mines and they are covered by the Federal mine-safety bill. Evidently it is doing all right with them, and that is the way I feel about the bill you gentlemen are considering. I feel it will do us some good, plus the operators.

Mr. Chairman, could I have this entire address made by Admiral Moreell put into the record?

Mr. METCALF. Is he the gentleman who was on the Hoover Commisison and made the water-resources survey? If his statements are no more authoritative insofar as the safety programs are concerned than they were as a part of the water resources are concerned, I doubt

if they will have much bearing with the members of the committee. But I am not going to make any objection. Is there objection to the insertion of Mr. Moreell's statement?

Mr. RHODES. I would like to say the gentleman from Arizona concurs with the statement of the chairman.

Mr. METCALF. Without objection, Mr. Moreell's statement will be inserted at this point in the record.

(The statement is as follows:)

CAN LABOR-MANAGEMENT SAFETY PROGRAMS BE MADE SUCCESSFUL?

By Ben Moreell, chairman of the board, Jones & Laughlin Steel Corp. (an address delivered to the National Safety Congress, Chicago, Ill., October 24, 1956)

Since we are now in the midst of what is frequently called the silly season for speeches, I believe it is appropriate for me to announce, in advance, that I am not running for office, public or private, nor have I any political ambitions, past, present or future. This, I hope, will enable you to appraise the intellectual and ethical content of my remarks strictly on their merits, as I have not included any element of voter appeal, nor am I seeking favor for anything other than my ideas.

It has been requested that I address myself to the question, Can labor-management safety programs be made successful? In the light of the weighty problems, foreign and domestic, which now confront our people and our complete dependence upon great industrial productive capacity to sustain and strengthen our position in world affairs, it would, I believe, be pertinent to modify the question and ask, Can all of our labor-management programs be made successful?

I would go further and say that if we in America are to lead the way out of the morass of conflict and turmoil in which the world is now enmeshed, we must show by percept, and especially by example, that labor-management programs are successful in America; that here we have succeeded in establishing objectives and procedures in which all concerned participate willingly and from which each can benefit in proportion to his contribution, with resultant profit to the whole community. I believe that unless such an overall program of rewarding objectives can be devised and made effective, it will not suffice to formulate subsidiary programs in less restricted areas, such, for example, as health, accident prevention, profit-sharing, education, recreation, etc.

What should be the basis of such a program? I found a clue in a poem by Edwin Markham:

"Why build these cities glorious
If man unbuilded goes?
In vain we build the world
Unless the builder also grows."

ESSENTIAL ELEMENT IS MEN

Not long ago I was asked by our personnel director to write the foreword for a little book which we proposed to use in our recruiting program. Among other things, I wrote this: "It has been stated that every manufacturing enterprise consists essentially of men, money, and machines. I agree with this thesis. But I would go further and say that if the enterprise has the right kind of men, it can obtain the money and build or buy the machines. The irreplaceable essention element is men."

By this statement, it was my purpose to bring to the attention of those who might be interested in coming to work for our company the very high valuation which we place on the human element. But, more than that, it was my intention to remind our top management, and their subordinates, that our people constitute our most important asset, much more important than the tools and equipment and furnaces and mills with which and in which they work.

ENHANCEMENT OF HUMAN VALUES

It has been one of my guiding principles that no endeavor is ever successful ultimately, unless it has contributed, directly or indirectly, to the conservation and enhancement of human values. In fact, I believe that the measure of success of any activity is to be found in the degree in which it has helped people to

help themselves. This I believe to be the very essence of "enhancement of human values." For, in this concept there is neither a condescending paternalism nor a sloppy sentimentalism, both of which frequently masquerade under the guise of "humanitarianism." It is, rather, in conformity with the thesis of that greatest of all living humanitarians, Albert Schweitzer, who said, "Humanitarianism consists in never sacrificing a human being to a purpose. The great conflict of our times is personality versus collectivism."

The implication here is that while we can and should obtain valuable data from the study of large numbers of people, the lessons learned must be applied to individuals. Ultimately, each of us must bear the responsibility for his own health and welfare, as well as for that of those dependent upon us. All of us need advice and guidance in learning how to discharge that responsibility. But we cannot morally shift it to another's shoulders.

A NEW DEFINITION NEEDED

From what I have said it is evident that I visualize the dire need for labor-management cooperation in a much larger area than accident prevention. If we are willing to define "safety programs" as all those activities which could contribute to the conservation and enhancement of human values, we will have a more valid definition of the area of potential labor-management cooperative efforts.

What are the principal fields of such an area? The most obvious, and the one which is probably of most urgent importance, is on-the-job accident prevention. Next in order of obvious need is the elimination of inplant hazards to health. From this is is a logical step to provide information and instruction for the employee in avoiding hazards to health outside as well as inside the plant and in building up a reservoir of physical stamina which will enable him to resist disease and physical deterioration.

MENTAL HYGIENE LOOMS IMPORTANT

Then, there is the relatively new field of mental hygiene which may ultimately prove to have importance equal to or greater than any of the others. Mental hygiene entails the elimination of conditions of employment which tend to induce unnecessary mental stress and disorders.

This is a vast field with almost unlimited opportunity for fruitful effort. The ultimate objective is good mental hygiene. This has been attained when a person has learned to lead a satisfying life regardless of his position, situation, or problems. Our foremost students of the subject have concluded that mental health can never be given. The individual has to work for it. As a result of the satisfactions he obtains in the process of working, he achieves good mental adjustment. In this way he is able to obtain a sense of personal worth and dignity and thus to make his job more purposeful and more meaningful to him.

Here lies a great potential for helping the individual to help himself. It could mean favorable changes in attitudes, higher morale, better personal relationships, and mutual understanding and sympathy. I am encouraged to believe that in this process the delilitating emotions of anxiety, fear, insecurity, and resentment could be replaced by their positive opposites—faith, courage, confidence, and good will.

DEPARTMENT OF HUMAN VALUES

I believe it is not too much to expect that some day we will have, at least in our larger industrial establishments, what might be called a department of human values. As its name implies, its basic function would be to foster the conservation and enhancement of human values. Such a department would be concerned with the physical and mental health of employees, the satisfactions which they derive from their labors, assignment of proper duties, accident prevention, elimination of health hazards, training and education, congenial working conditions, mental and physical hygiene, wages, security of tenure, promotions, and any other factors which affect the physical or mental well-being of the employee.

To appraise the degree of success which could be attained by joint labor-management efforts in the area covered by these activities, one can profitably consider the field wherein maximum efforts have already been expended and maximum progress made, namely, accident prevention.

The lessons to be learned from an examination of this field could be applied profitably to the fields which I have mentioned before.

TWO CAUSES FOR ACCIDENTS

Our experience indicates that accidents stem from two main causes which are (*a*) unsafe conditions and (*b*) unsafe conduct. In general, management can effectively eliminate unsafe conditions. But the elimination of unsafe conduct requires a much more comprehensive and intensive effort, since we are dealing here with the manifold vagaries of human nature. There must be developed by indoctrination, education, and training a safety-conscious climate which will result in an enthusiastic acceptance of and an eager willingness to cooperate voluntarily in a worthy cause.

Here is a vast field for joint labor-management action. Our exeprience proves conclusively that unless there is such cooperation no safety program can succeed.

I trust that I have not given the impression in what has been said that little progress in safety has been made to date. This is far from true. Perhaps a brief reference to some of the results of the safety programs pursued in my company will serve to illustrate this point.

GOOD RECORDS MUST GROW BETTER

During the past 10 years, 1946 to date, the records indicate that for all units of our corporation, comprising approximately 43,000 employees, the injury frequency rate has been reduced by 60 percent. Similarly, the injury severity rate is now slightly less than half what it was 10 years ago. When these cold statistics are translated into terms of lives and limbs of a working force of 43,000, it can be seen that we have much reason to be encouraged—but not to be complacent. For I believe that even 1 injury, even in a working force of 43,000, is 1 too many.

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TEN J. & L. PLANTS TO GET AWARDS

A year ago at the National Safety Conference meeting here in Chicago, eight of our smaller plants received plaques in the metals section contest for perfect safety records from July 1, 1954, to June 30, 1955. And at this conference 10 of our plants will receive similar awards for the period July 1, 1955, to June 30, 1956.

I have just received a report that our large steel mill at Aliquippa, Pa., with 14,142 employees, worked 1,018,444 man-hours during the first half of September without a lost-time injury, and that this is the fourth time during 1956 that this works has accumulated a million or more man-hours without a disabling injury.

As I have stated, these results are encouraging but they do not warrant complacence. They are the result of the most intensive effort and the closest collaboration between management and the representatives of our working forces.

Where do we go from here? No craftsman worthy of his salt will be satisfied to rest on his laurels. He is constantly striving to break records. And so it is in our safety work. Our programs are under continuous scrutiny and they are always in a state of flux.

EIGHT POINTS FOR ADVANCEMENT

From our studies, we have drawn certain conclusions and have undertaken certain steps which we hope will move us farther along the road to that much-desired goal—complete safety in all of our operations. The following observations are, I believe, pertinent and may be helpful to others who are toiling in this vineyard:

(1) Formalized safety programs and organized safety measures are realtively young. There is still much to be learned in this field, especially

in the area of human behavior. Great progress has been made and there is no reason for discouragement.

(2) Education and training of both supervisors and workmen is essential for good results. We are now giving our supervisors specific training in accident-prevention problems. Shortly, we will introduce a basic accident-prevention training course to help the supervisor in instructing his workers in safe working habits.

(3) We are exercising great care in the selection of supervisors. We choose men who have a sympathetic understanding of human nature and who know their trade. The first-line level of supervision is the place where safety practices are born.

(4) We are encouraging the workers to recommend changes in conditions and in practices to promote safety. And, of utmost importance, we are paying attention to and acting upon their recommendations. When we don't agree with them we tell them why.

(5) We are trying to dispel the notion, held in some quarters, that management's only interest in safety is to reduce costs. We believe with Albert Schweitzer, "Humanitarianism consists in never sacrificing a human being to a purpose."

(6) We are attempting to engineer into our equipment and into our industrial practices the all-important human factor. Our objective is to produce efficiently, not only with respect to the cost and quality of the physical products, but also with respect to the effects on the human beings who operate the machines and processes. Such efforts are not entirely altruistic; I am convinced that in the long run they will result in far greater productivity.

(7) We are attempting to supplement the dry statistical approach to safety (which in many instances consists only of a tabulation of events) by boldly probing into the causes of industrial accidents without regard to whose toes we may be treading on.

(8) We are doing out utmost to induce labor to undertake a maximum participation in this work, with an equitable division of duties between management and labor. We have organized labor-management safety committees at our three steel works and at most of our subsidiary operations, and the labor representatives on these committees speak their minds without restraint.

There are many realistic working procedures which we have adopted to improve our safety practices. Probably most of these are known to this audience. Among them are job analyses to reduce or eliminate hazards; boards of inquiry, with a representative of labor as a full member thereof, to investigate the causes of fatalities; immediate investigation of all accidents with the cooperation of labor representatives; insistence that the union safety committee bring unsafe practices to the attention of management; and increasing education and indoctrination of all ranks in safety measures. All of these are described in detail in a comprehensive safety manual.

MEDICAL DEPARTMENT A KEY FACTOR

Perhaps of greatest importance is our well-staffed and expertly administered medical department, which is backed up by the finest modern facilities and equipment. Time will not permit me to go into details, but I would like to state for the record that an efficient medical department manned by competet personnel, well administered, and with honest and sympathetic concern for the welfare of the individual employee, can be an asset of extreme value. Its influence will be felt in areas far removed from the dispensary and will be reflected in greater job satisfactions and higher employee morale.

The cooperation between labor and management in our safety and health programs has been formalized in the labor contract between the corporation and the United Steelworwers of America, AFL–CIO. But no formal contractual language can ever be effective in achieving the degree of safety for which we are all striving unless it is buttressed by a deep-seated mutuality of interest between the parties. Surely, here, in our commonly held desire to conserve and enhance human values we can achieve such a mutuality of interest. And, hopefully, we can learn from this experience how to eliminate or reduce antagonism and distrust in the other areas and which, in turn, cause so much human misery in our industrial society. I am completely in accord with the statement made by that great pioneer in the safety movement, Albert W. Whitney, to this effect:

"I am inclined to believe when the industrial history of our times is written that much of the credit for the better relationship between management and labor that is beginning to show itself will be given to industrial safety. Anything that is to serve as an effective basis of cooperation between any two interests must be a matter on which they can work together with advantage to both. There can be no basis for genuine cooperation and understanding that is not a matter of common self-interest."

GENUINE COOPERATION IS NECESSARY

I have referred previously to the vital importance of labor-management understanding and collaboration in all areas of our industrial establishment. Our ability to defend our freedoms is directly dependent upon our ability to produce more and better goods than a potential enemy. We must strive mightily to bring about that genuine cooperation of which Mr. Whitney spoke. For here, surely, there is a matter of common self-interest. The subject is too voluminous and too involved to be treated adequately in a short address, such as this. I would say, however, that much progress has already been made and much more can be made when labor is willing to put aside the accumulated resentments which stem from past injustices, many of which were very real and oppressive, and when management is willing to take labor into its confidence on many matters heretofore held to be top secret, but knowledge of which is essential to labor if they are to make well-reasoned decisions. Both of these measures are necessary if we are to go forward in a spirit of mutual trust and confidence. What I am proposing here is a real partnership, with each partner retaining his own area of exclusive jurisdiction, and with a free exchange of information without which we cannot attain that area of common self-interest of which Mr. Whitney spoke.

PRINCIPLES OF SAFETY UNCHANGED

A few years ago I wrote a letter to the employees of our corporation on the subject of safety. Among other statements was the following:

"Although the establishment of safe and healthful working conditions can be justified on a cold dollar-and-cents basis, I prefer to justify it on the basic principle that it is the right thing to do.

"In discussing safety in industrial operations, I have frequently heard it stated that the cost of adequate health and safety measures would be prohibitive and that 'we can't afford it.' My answer to that is quite simple and direct. It is this: 'If we can't afford safety, we can't afford to be in business.'"

That still represents our management's firm conviction. And I am sure that it is shared wholeheartedly by the labor half of our safety team.

Mr. BURKE. The Bureau of Mines has established a brilliant record in the curtailment of accidents occurring in coal mines. I do not need to remind this subcommittee that if it were not for two terrible explosions, namely, Centralia and West Frankfort, that the coal miners would not have the protection they now have.

I have submitted the rock burst reports to you already.

Mr. METCALF. Is this where you want these reports inserted?

Mr. BURKE. Yes; the rock burst reports.

Mr. METCALF. I have been advised that we will be able to reproduce the charts from these reports, and the reporter will make copies of them for the record and see that these are returned to Mr. Burke.

Mr. BURKE. Thank you.

Mr. METCALF. These are admitted. They will be received at this point in the record.

(The reports are as follows:)

Progress Report No. 1—Rock Burst Investigation, Calumet & Hecla Consolidated Mining Co., Calumet, Mich.

INTRODUCTION

This report covers the progress of the rock burst investigation being conducted in the Ahmeek mine, Calumet & Hecla Consolidated Mining Co., Calumet, Mich. The report includes a brief summary of a previous investigation conducted in this mine in 1940. Also recommendations are included for alterations in the mining procedure being employed by the company, which will constitute the next step in the effort to minimize the rock bursts hazard. The present investigation was initiated following a visit to the mine by Mr. Emil W. Felegy, mining engineer, during which he learned of the rock burst situation and witnessed a major burst. This branch was apprised of the current problem at the Ahmeek mine through the region IV office, Minneapolis, Minn. In February 1951 Obert visited the company offices and discussed the problem at first hand with Mr. O. A. Rockwell, general manager and vice president. It was decided at this meeting to resume the rock-burst study in the Ahmeek mine on an informal cooperative basis, whereby the Bureau of Mines would furnish microseismic equipment and other necessary apparatus, and station an engineer at this mine for a period of approximately 3 months to train a company engineer in the operation of the equipment in the analysis of the data.

PREVIOUS INVESTIGATION

In 1940 the Bureau of Mines conducted a rock burst investigation in the Ahmeek mine, the object of which was to determine whether or not seismic methods could be employed for predicting rock bursts. During the course of this investigation, the microseismic method was developed and subsequently employed to determine to what degree the method could be used to predict rock bursts. After 3 months of investigation, it was found that the method was partially satisfactory for this purpose, for example, in the 30-day period, 14 bursts that occurred in the area under observation, 9 gave prior indication sufficient to warrant prediction, 5 did not give sufficient prior indication to warrant prediction, and 3 predictions were made for which no burst occurred.

PRESENT INVESTIGATION

The purpose of this investigation is threefold. First, to determine whether or not an improvement can be made in the degree of prediction of rock bursts, using the microseismic method as the basic means of measurement; second, to determine whether or not alterations can be effected in the mining method which will minimize the occurrence of rock bursts. The recommendations for these alterations are to be based on what has been learned from rock burst investigations in other mines, from a structural analysis of the stopes in the Ahmeek mine, and from the microseismic data; and third, to effect changes in the mining method which will cause the bursts to concentrate in periods in which the mine is idle, that is, between shifts.

The investigation in the Ahmeek mine was started on May 28 with the installation of two microseismic recorders in the 45th level south. Geophone holes were drilled over the 46th level stopes at a point lying between 700 south and 1200 south. A map of this section of the mine showing the location of the recording equipment and geophone holes is given in figure 1. In the original experimental setup, geophones were installed in holes 1, 2, 4, and 15. Microseismic records were taken for 1½ hours following the morning shift and 4 hours following the evening shift. Besides the microseismic data, records were kept of the number, location, and intensity of rock bursts occurring during the working periods. It is also possible to determine from the microseismic records when bursts occur during the off-shift periods. However, there is a 3-hour period following the end of the second recording period during which no record of the number of rock bursts is obtained.

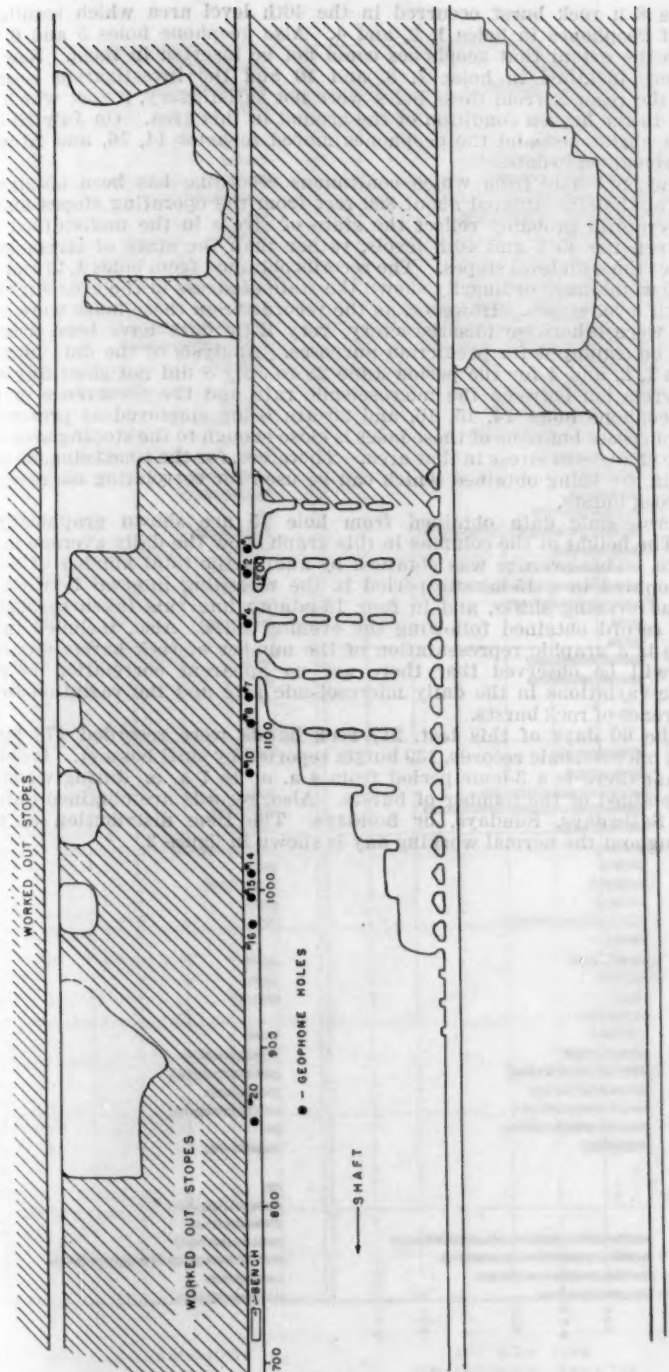

FIG. 1 - PLAN OF 44TH, 45TH, 46TH, AND 47TH LEVELS BETWEEN 700 AND 1500 SOUTH - AHMEEK MINE

On June 8 a rock burst occurred in the 46th level area which resulted in the loss of geophones in holes 1, 2, and 4. Also geophone holes 5 and 6 were crushed to the extent that geophones could not be inserted in them. New geophones were installed in holes 7, 8, and 10 and the investigation resumed. However, the records from these holes were not satisfactory, a fact which was attributed to the broken condition of the ground in this area. On July 20 these holes were abandoned and the geophones moved to holes 14, 16, and 20 where they have remained to date.

Thus, the only hole from which continuous recording has been obtained is No. 15. This hole is situated about 300 feet from the operating stopes and the records thereform probably reflect the state of stress in the undisturbed rock lying between the 45th and 46th levels, rather than the state of stress in the proximity of the 46th level stopes. The records obtained from holes 1, 2, and 4, or 7, 8, and 10 would have ordinarily shown the state of stress in the area surrounding the 46th level stopes. However, as the records from these holes were interrupted or were otherwise unsatisfactory, very little data have been obtained which can be employed for prediction purposes. Analysis of the data obtained from holes 1, 2, and 4 for the period June 28 to July 8 did not show any well-defined correlation between the microseismic rate and the occurrence of rock brusts. Geophone holes 14, 15, 16, and 20 are being employed at present for recording purposes but none of these holes is close enough to the stoping area to be sensitive to changes in stress in that area. Therefore, for the time being, no satisfactory data are being obtained which can be used for correlating microseismic rate with rock bursts.

The microseismic data obtained from hole 15 are shown graphically in figure 2. The height of the columns in this graph show the daily average microseismic rate. This average was obtained by adding the total number of microseismims counted in a 15-minute period in the recording interval between the morning and evening shifts, and in four 15-minute intervals taken throughout the 4-hour record obtained following the evening shift. Also, included in the same figure is a graphic representation of the number of rock bursts occurring daily. It will be observed that there are no apparent correlation between the sporatic variations in the daily microseismic rate and the variation in the daily occurrence of rock bursts.

During the 60 days of this test, 217 rock bursts were recorded (78 bursts recorded on microseismic records, 139 bursts reported by shift bosses). It should be noted that there is a 3-hour period from 4 a. m. to 7 a. m. during which no record is obtained of the number of bursts. Also, records are obtained only on occasional Saturdays, Sundays, or holidays. The time distribution of rock bursts throughout the normal working day is shown in figure 3.

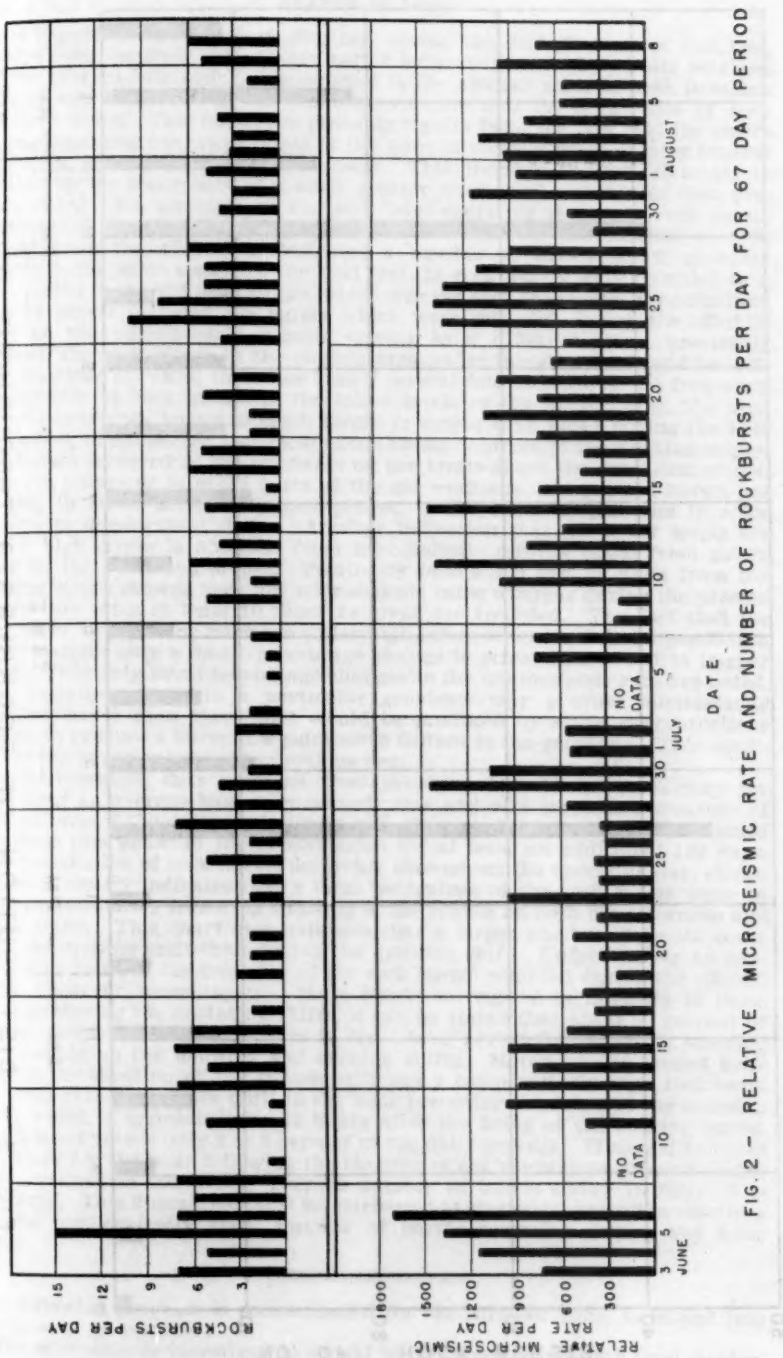

FIG. 2 - RELATIVE MICROSEISMIC RATE AND NUMBER OF ROCKBURSTS PER DAY FOR 67 DAY PERIOD

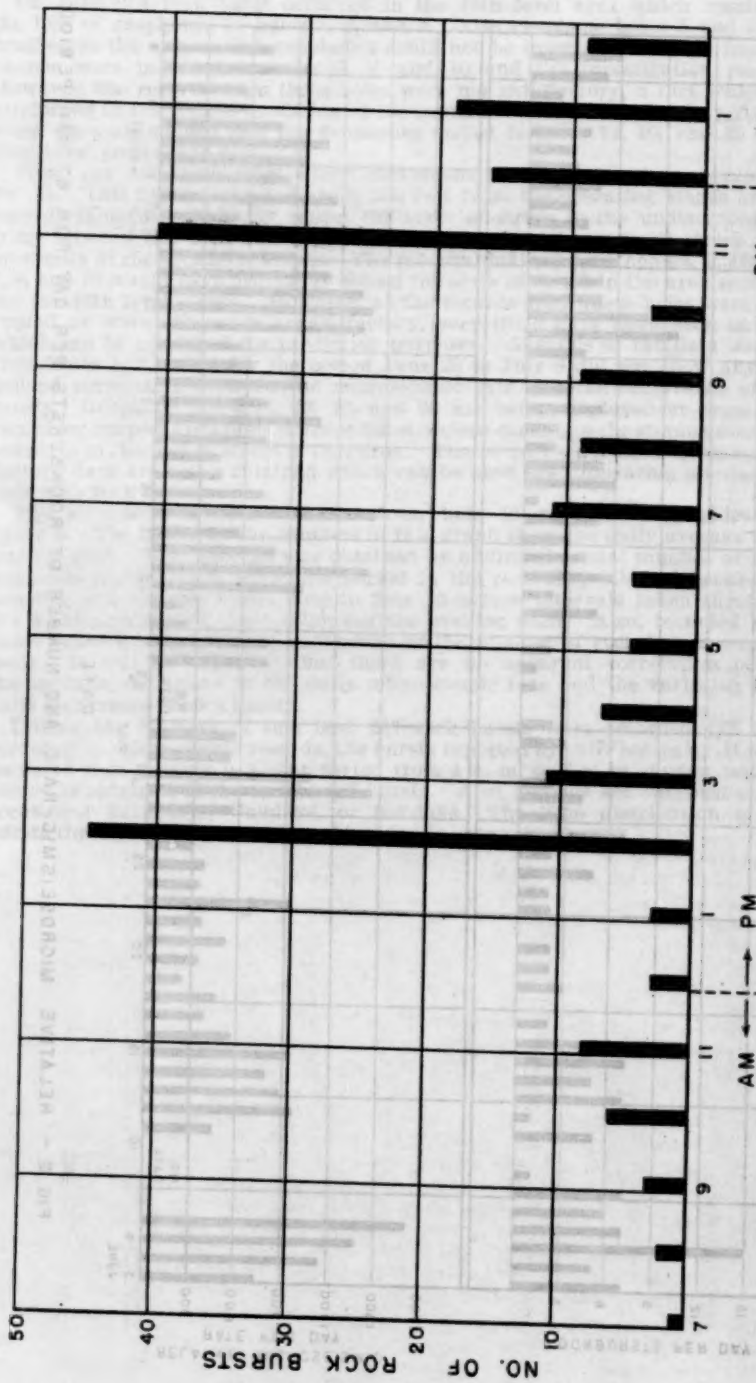

FIG. 3 - DISTRIBUTION OF ROCKBURSTS THROUGHOUT WORKING DAY

ANAYSIS OF DATA

It is apparent that the data obtained during the first 60 days of this test, although comparatively meager, are not in agreement with the results obtained from the first microseismic test conducted in the Ahmeek mine in 1940, in which a fair correlation between the microseismic rate and the occurrence of rock bursts was noted. This difference probably results from the fact that the entire area encompassing the lower levels of the mine is under a much greater general stress than noted during the 1940 tests. This increase in general stress is indicated by the occurrence of a much greater number of rock bursts than previously noted. For example, in the 46th level operating stopes, 11 rock bursts were reported during a 10-operating-day period. Also, the microseismic records obtained from the 45th level indicated a number of bursts which probably occurred in the same area. In the 1941 test, 14 rock bursts were recorded in a 30-day period in the 43d level stopes, which was the area then under investigation. These 14 bursts included the bursts which were recorded during the off-shift period on the microseismic records (owing to a different setup, previously employed, the rock bursts in the stoping area under investigation could be definitely identified). Thus, there has been a several fold increase in the frequency of occurrence of rock bursts in the lower levels of the mine. Also, the area now subject to rock bursts is much larger in extent than noted during the 1940 tests, in fact, in the earlier test, most of the bursts occurred in the working stopes, a few bursts occurred in the remnants on the levels above the operating stopes, and in rib pillars or in other parts of the old workings. At present bursts are occurring in shoot holes and shoot pillars, in the lower stopes, and in some instances in development drifts. Another indication that the lower levels are under a high stress is obtained from microseismic records taken from points distant to the operating stopes. Previously points 300 feet or more from the operating stopes showed very low microseismic rates whereas during the present investigation rates at least 10 times as great are recorded. The fact that the entire lower levels of the mine are under high stress makes rock burst prediction difficult because only a small percentage change in stress is required to trigger a burst. Thus only small percentage changes in the microseismic rate are noted. Stress variations local to a particular geophone may produce microseismic variations larger than those that would be produced by stress concentrations sufficient to produce a burst at a point more distant to the geophone. This condition was not experienced in the previous test.

The microseismic data obtained from geophone hole 15 is satisfactory for establishing an average base microseismic rate and also serve as a measure of the magnitude of the daily variation in rate that can be expected. It is planned to continue this phase of the investigation for at least an additional 120 days.

The distribution of rock bursts occurring throughout the operating day, shown in figure 3, clearly indicates that a large percentage of the rock bursts occur in the hour immediately following shooting of the rounds on both the afternoon and evening shifts. This chart also indicates that a larger number of bursts occur during the evening shift than during the morning shift. Unfortunately no estimate can be made of the intensity of the rock bursts recorded during the offshift period. However, assuming that these bursts correspond in intensity to those that occur during the operating shifts, it can be stated that about 50 percent of the total rock-burst activity occurs in the 1-hour period following the shooting of the rounds on the morning and evening shifts. Moreover, the second hour following the shooting of the rounds still has a comparatively high rock-burst rate. This rate diminishes until in the hour preceding the firing of the morning rounds, which is approximately 12 hours after the firing of the evening round, the rock-burst rate is only 2 or 3 percent of the daily average. It should be noted that, except for the hour following the blasting of the morning or evening shifts, the fluctuations in the hourly average number of bursts shown in figure 3 is fairly large. This fluctuation must be attributed to statistical variation resulting from the comparatively small number of bursts occurring during any hour interval.

RECOMMENDATIONS

The following program is recommended for the Ahmeek mine, to be put into effect as soon as possible:

1. The microseismic investigation should be continued on the 46th level employing 2 microseismic recorders and 4 geophones. The data obtained will serve as a base for comparison of changes to be effected in mining procedure. Also, fur-

ther effort should be made to see if any correlation can be established between microseismic rate and burst activity.

2. The microseismic recording should be continued througout the 8-hour period following the evening shift so that a 24-hour count can be established for occurrence of rock bursts. Also, during the operating shifts more effort should be made to establish the exact location and the intensity of rock bursts. The intensity can be estimated from the extent of broken ground.

3. There is a clear-cut indication that the firing of the rounds trigger rock bursts. In an effort to concentrate a larger part of the rock burst during offshift period it is recommended that electric firing be employed in all of the operating stopes south of the shaft pillar. The rounds should be fired with standard delays, all of which are tied to a common line which is closed from a single switch at the shaft. The simultaneous firing of the rounds on the various levels and stopes will produce a strong bump which it is hoped will trigger rock bursts. This operating procedure has been found useful in concentrating bursts in offshift periods in the Lake Shore Mine, Kirkland Lake, Ontario, Canada. If this procedure proves fruitful the technique might be further improved by employing millisecond firing in the stopes. This procedure would make possible the firing of all of the rounds on the south side of the mine in a preiod of only a fraction of a second. This latter change might however necessitate some experimentation in the drilling of the rounds to effect an optimum break with MS caps.

4. Because a large percentage of the bursts occur during offshift periods and because the simultaneous shooting may further increase the number of bursts that occur during this period, it is recommended that the interval between the morning and the evening shift be increased to a minimum of 2 hours. Further changes in the spacing of the operating shifts may be indicated by results obtained from the change proposed in 3 above.

5. No change in mining procedure is recommended at this time other than that stated in 3. It may be possible that at a later date some changes might be recommended such as drilling and shooting down a portion of the roof behind the operating stopes to relieve the immediate stress distribution around these stopes. While this procedure might reduce the number of bursts in the operating stopes there is also the possibility that it might result in less frequent but larger bursts which would effect a more general area. A possibility of leaving larger pillars in the stoping area is not recommended at this time. It is noted that random pillars or remnants usually enhance the possibility of bursts and it is felt that unless a system of mining involving regularly spaced pillars and a reduction in the recovery from a present 95 percent to approximately 50 percent, such a change is not warranted.

Progress Report No. 2—Rock-Burst Investigation, Calumet & Hecla Consolidated Copper Co., Calumet, Mich.

This is the second progress report of the cooperative investigation with the Calumet & Hecla Consolidated Copper Co., on the rock-burst investigation in the Ahmeek Mine. The first report presented the objectives of the investigation together with a description of the instrumentation installed in the mine and the data and analysis of results obtained between May 28 and August 9, 1951. This report also included a number of recommendations for changes in both the operation of the microseismic equipment and in mining procedure. The first report concluded the first phase of the investigation.

This report covers the operation of the project between August 9 and November 28, 1951. The data and analysis of results obtained during this period are presented together with recommendations for the continuation of the projects during the next 6 months. The second progress report concludes the second phase of the program.

A review of the instrumentation employed to date is given in the following:

On May 28, 2 microseismic recorders and 4 geophones were installed on the 45th level south at the Ahmeek No. 3 shaft. A total of 16 geophone holes were drilled on 16-foot centers in the hanging wall over the 46th level slopes between 700 and 1,200 south. Geophones were first placed in holes 1, 2, 4, and 15, hole No. 1 being at 1200 south.

Microseismic records were taken between shifts from 2:30 to 3:30 p. m. and from 11:30 p. m. to 3 a. m. Records were also kept of the number, intensity and location of rock bursts that occurred during working periods. Rock bursts occur-

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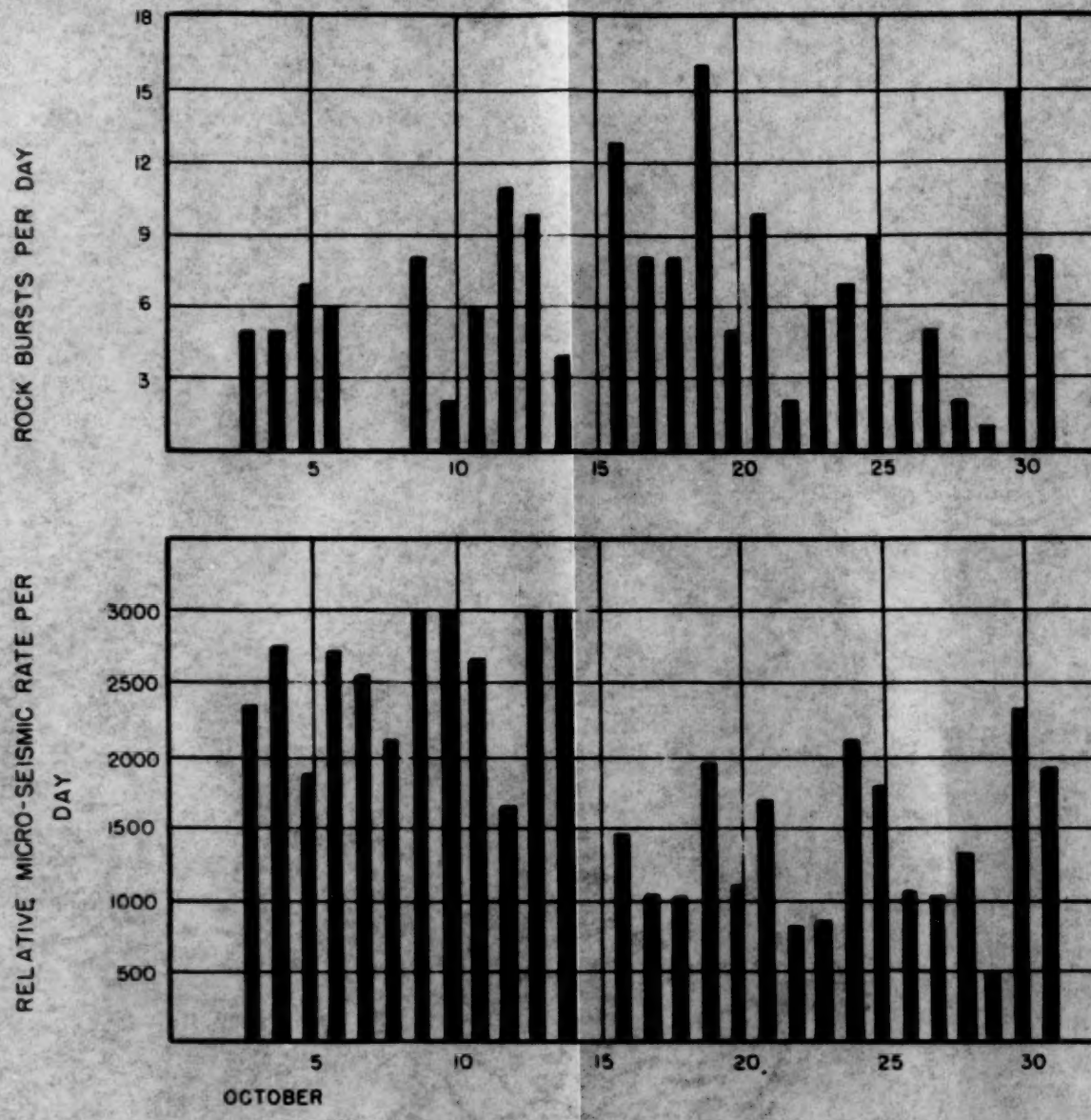
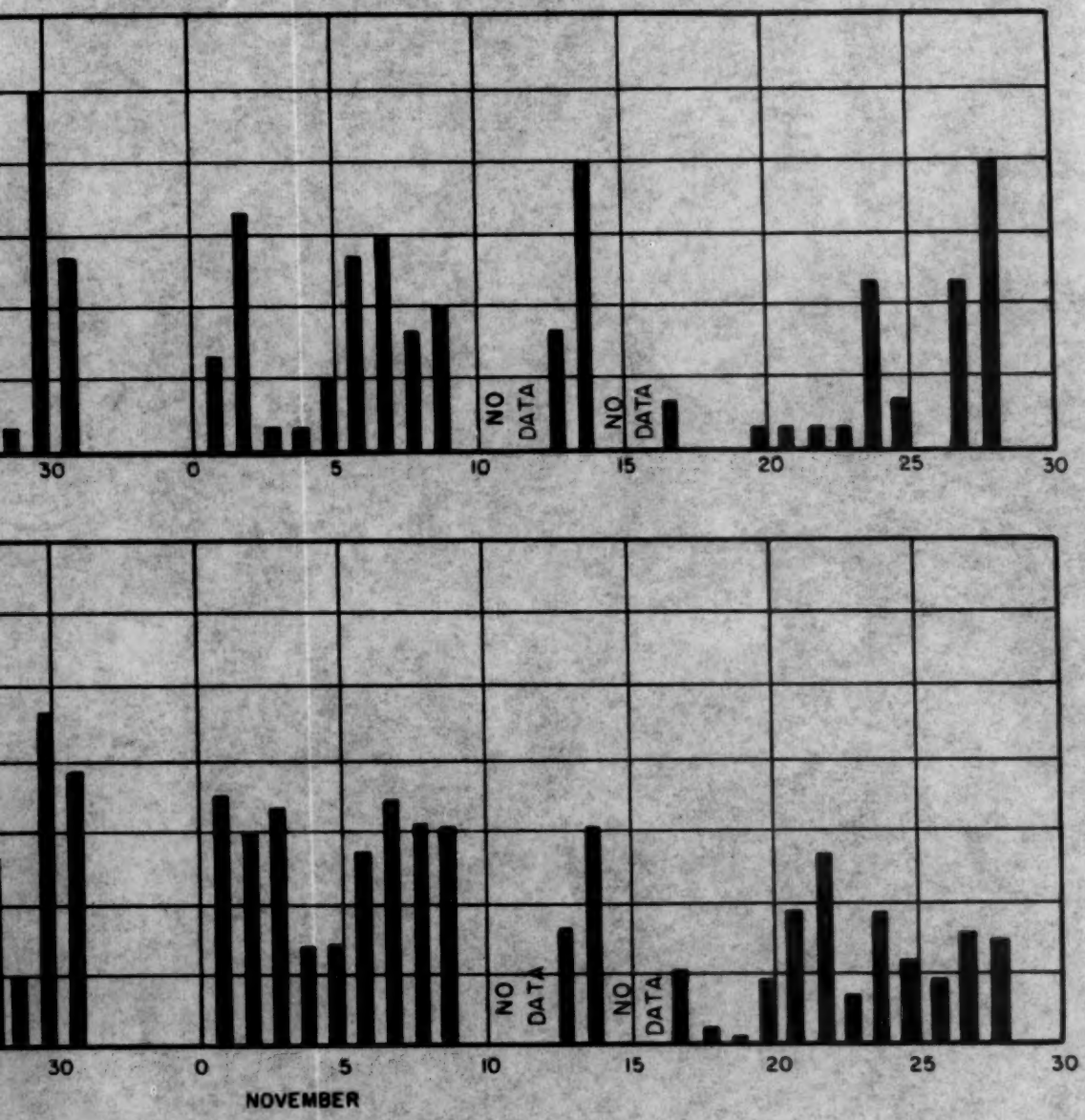


PHA

RELATIVE MICRO-SEISMIC RATE AND NUMBER OF ROCK BURST

FIG



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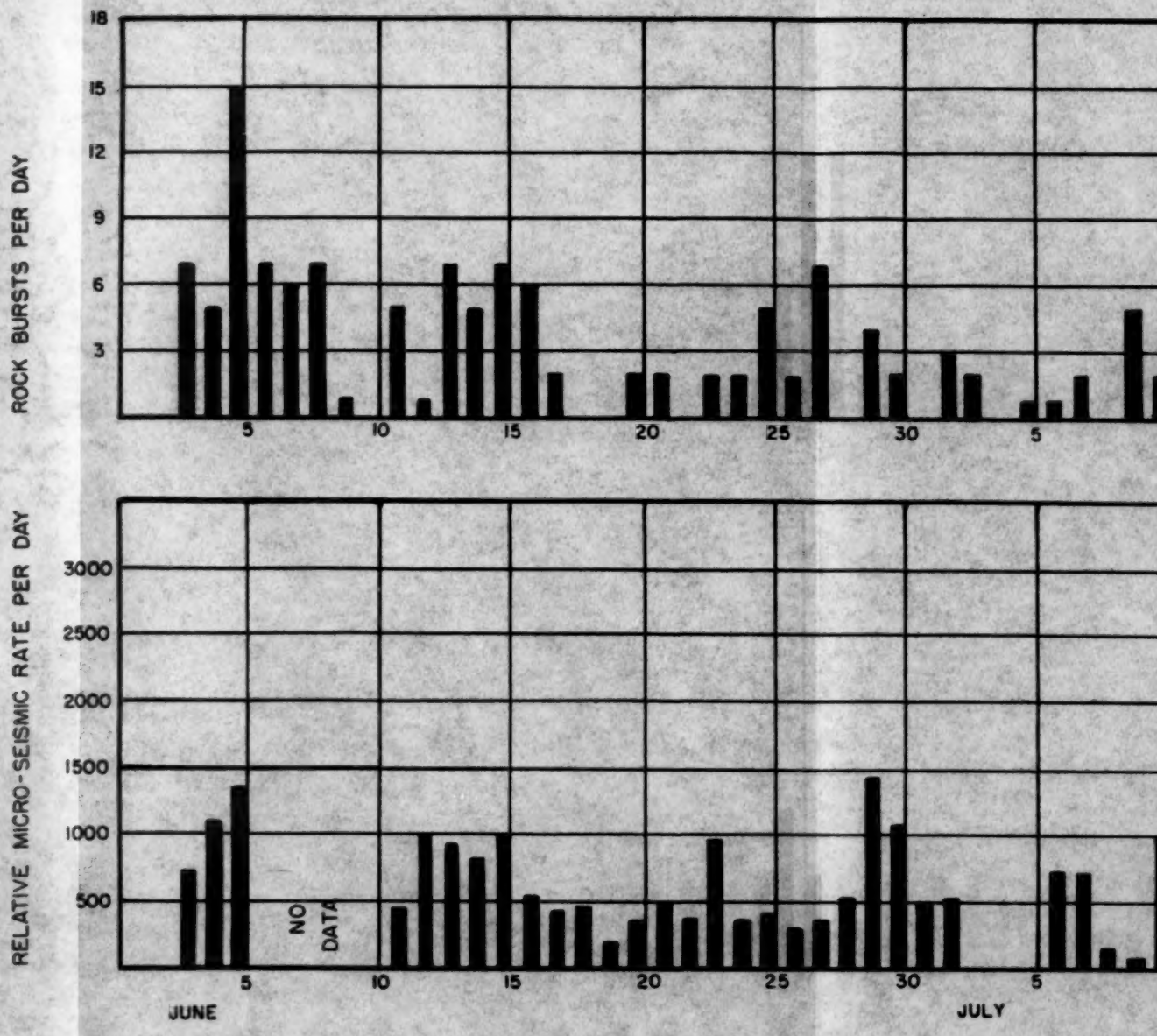
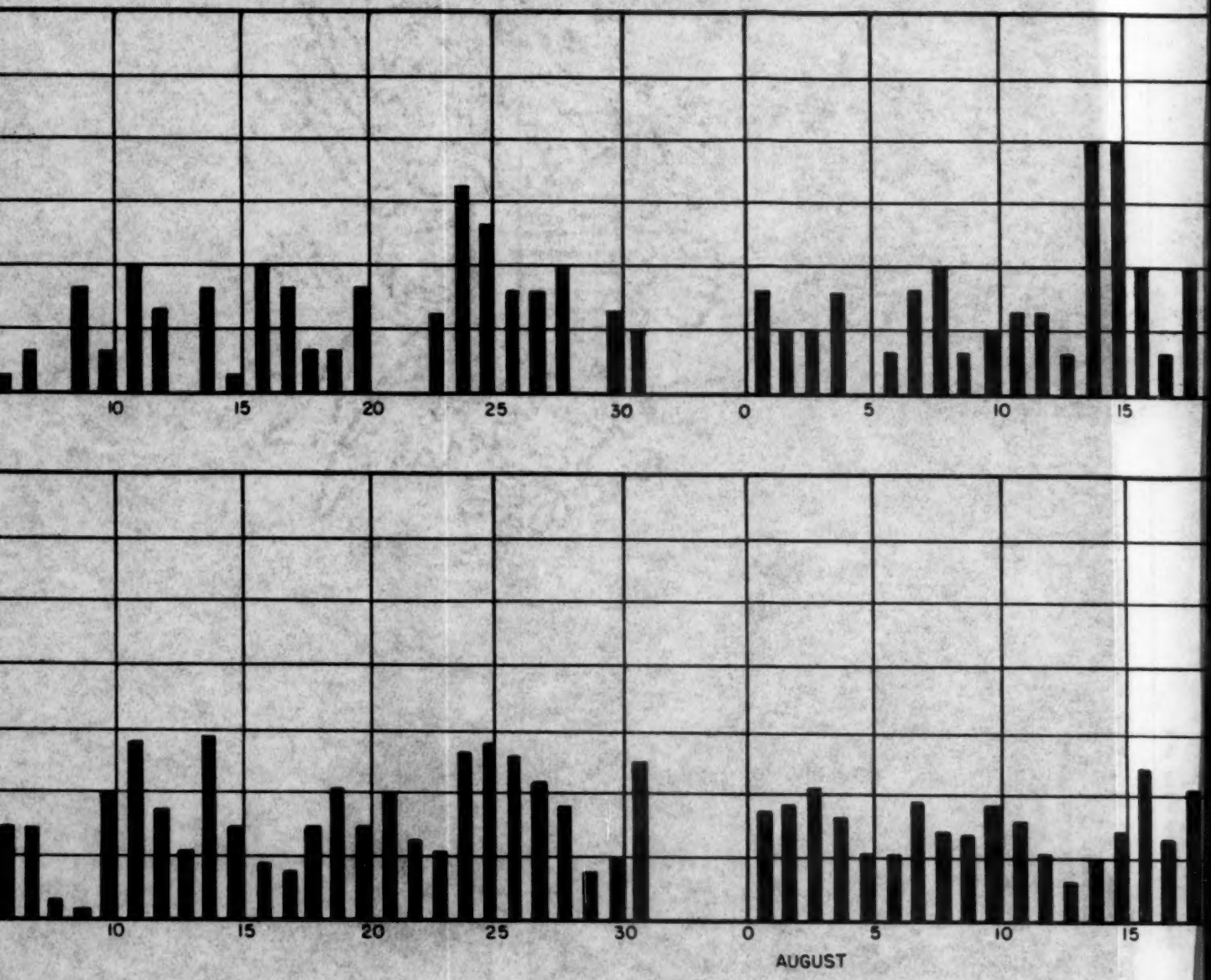
PHASE 2

K BURSTS PER DAY FOR 57 DAY PERIOD AFTER ELECTRIC BLASTING.

FIG. 18



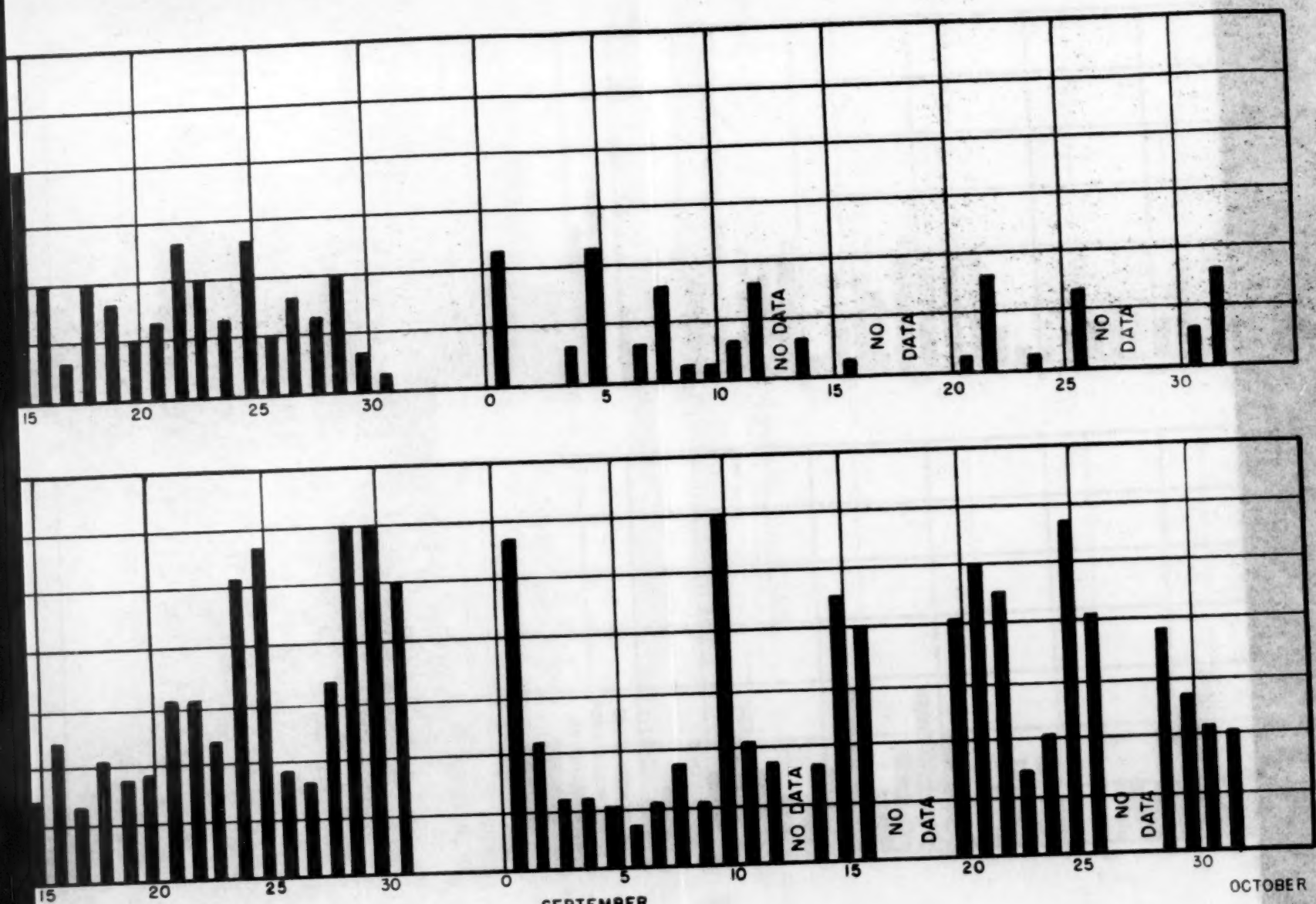
RELATIVE MICRO-SEISMIC



PHASE I

EISMIC RATE AND NUMBER OF ROCK BURSTS PER DAY FOR 122 DAY PERIOD BEFORE ELE

FIG. 1A



ELECTRIC BLASTING.

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ring between shifts were recorded by the microseismic equipment. No rock-burst data were obtained for the period between 3 and 7 a. m.

On June 8 a rock burst occurred in the test area which destroyed the geophones in holes 1, 2, and 4. Holes 5 and 6 were crushed and 300-feet cable was destroyed. The investigation was resumed with new geophones in holes 7, 8, and 10. Records from these holes proved unsatisfactory, probably because of the crushed condition of the rock. On July 20 the geophones were moved to holes 14, 16, and 20, hole 15 being retained. The geophones remained in these holes until the end of the second phase of the investigation on November 28.

During the period July 21 to August 9 the records obtained from all holes except 15 were generally unsatisfactory because of a series of equipment troubles. From August 9 to November 28 the records were generally satisfactory. Data from hole 15 throughout the program and from holes 14, 16, and 20 after August 8 were acceptable for analysis purposes.

Throughout both the first and second phase of the investigation two procedures have been employed for presenting data. First, the daily microseismic counts for each of the recording periods has been presented in a chart which also includes the total number of rock bursts occurring during the corresponding period; and second, a chart has been prepared which shows the distribution of rock bursts occurring through each of the working days. Figure 1 and 2 present each of these charts for the period from the beginning of the investigation through November 28, 1951.

It is apparent from an examination of the microseismic counts and daily number of rock bursts chart (fig. 1) that there is no well defined correlation between either individual rock bursts or periods of increased rock-burst occurrence. Although the results obtained from the microseismic method are not encouraging it is believed that this procedure should be carried out through the third phase of the investigation because a considerable portion of the data were lost during the first two phases of the investigation owing to instrument failures or loss of geophone holes.

Regarding the time distribution of rock bursts throughout the working day; it was noted in the first report that a large percentage of rock bursts occurred following the firing of the rounds at the end of the shifts. It was recommended in the first progress report that electric firing with standard delays be employed in the 46th level stopes to concentrate the firing of the rounds in a relatively short period. It was hoped that the increased bump from the firing of the round would tend to increase the occurrence of rock bursts immediately thereafter, and correspondingly decrease rock bursts during the remainder of the shifts. This procedure was put into effect on October 2 on the 46th level and on October 9 on the 47th level south. Daily recording and analysis was carried on as before. Also, after October 2, a more detailed record was kept of the rock bursts which occurred during the working shift.

By November 15 it was evident from an analysis of the data that very little information was being obtained. The rock-bursts time distribution chart, made after the change to electric blasting, indicated a small increase in the number of bursts immediately following the firing of the rounds, but no reduction in the number of bursts occurring during the working shifts was noted. However, it is felt that a good statistical analysis cannot be made for as short a period as 43 days. Therefore, it is recommended that this part of the investigation be continued.

On November 28 Herbert Byrne visited the company to discuss the continuation of this program with the company engineers and to make an inspection of the microseismic installation and equipment. During the visit to Calumet several hours were spent in conference with Mr. Campbell, mine manager, and with Mr. Kuchta, mine engineer, in charge of the rock-bursting investigation. The progress of the program and the lack of definite results were discussed in detail as well as proposed changes in the operation of the equipment and in the mining procedure.

Mr. Campbell and Mr. Kuchta both favored continuing the investigation. The proposed changes which are listed in the following were approved by Mr. Campbell pending a final decision from Mr. Rockwell, vice president and general manager of the company:

Mr. Byrne spent 6 hours underground with Mr. Kuchta during which the microseismic installation was inspected and all equipment tested and calibrated. All components were found to be in good adjustment and operating properly.

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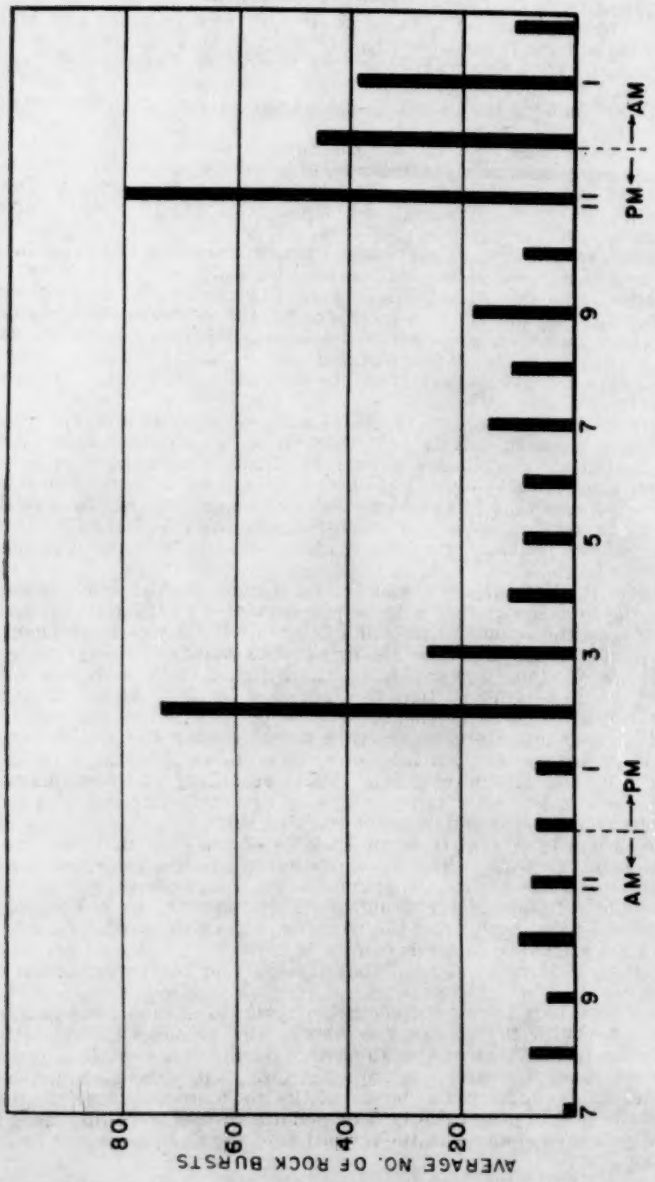
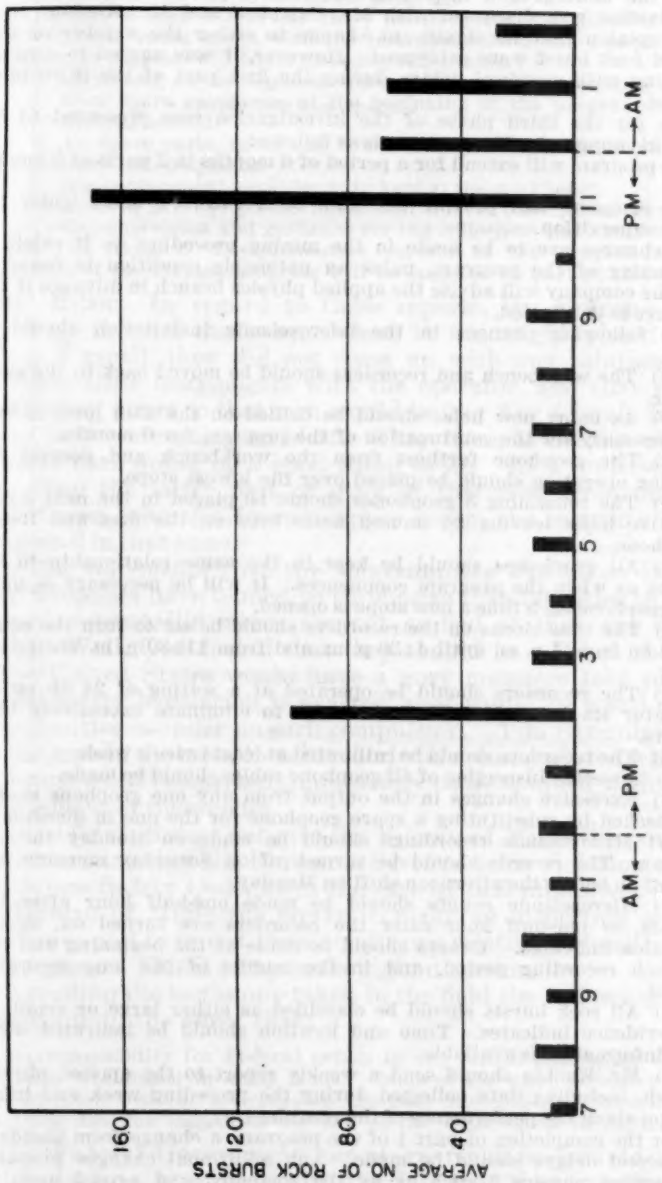


TIME DISTRIBUTION OF ROCK BURSTS
122 DAY PERIOD **BEFORE** ELECTRIC BLASTING
FIG. 2A



TIME DISTRIBUTION OF ROCK BURSTS
57 DAY PERIOD AFTER ELECTRIC BLASTING

FIG. 2B

FIG. 2A

A general inspection of the test area indicated that the program was being efficiently conducted from an instrumentation standpoint.

Following the underground inspection the results produced by the change to electric blasting was discussed with Mr. Campbell and Mr. Kuchta. Both were of the opinion that no significant change in either the number or time dstribution of rock burst were evidenced. However, it was agreed to continue electric blasting with standard delays during the first part of the third phase of the program.

A program for the third phase of the investigation was presented to Mr. Rockwell for his approval. The program is as follows:

1. The program will extend for a period of 6 months in 2 parts of 3 months each.

2. The company will provide one man on a full-time basis under Mr. Kuchta's supervision.

3. No changes are to be made in the mining procedure as it exists at the beginning of the program, unles an untenable condition is found to exist. The company will advise the applied physics branch in advance if any changes are to be effected.

4. The following changes in the microseismic installation should be effected.

(*a*) The workbench and recorders should be moved back to the shaft pillar.

(*b*) As many new holes should be drilled on the 45th level as will be necessary for the continuation of the program for 6 months.

(*c*) The geophone farthest from the workbench and nearest the stoping operation should be placed over the lowest stope.

(*d*) The remaining 3 geophones should be placed in the next 3 consecutive holes leaving no unused holes between the first and fourth geophone.

(*e*) All geophones should be kept in the same relationship to the stopes as when the program commences. It will be necessary to move one geophone each time a new stope is opened.

(*f*) The time clocks on the recorders should be set to turn the equipment on from 3 p. m. until 4:30 p. m. and from 11:30 p. m. until 5:30 a. m.

(*g*) The recorders should be operated at a setting of 24 db on attenuator Ra instead of 20 db in order to eliminate excessively high counts.

(*h*) The recorders should be calibrated at least twice a week.

(*j*) A weekly inspection of all geophone cables should be made.

(*k*) Excessive changes in the output from any one geophone should be checked by substituting a spare geophone for the one in question.

(*m*) Microseismic recordings should be made on Monday through Friday. The records should be turned off on Saturday morning and turned on before the afternoon shift on Monday.

(*n*) Microseismic counts should be made one-half hour after the rounds, or one-half hour after the recorders are turned on, as the situation indicates. Counts should be made at the beginning and end of each recording period, and in the middle of the long recording period.

(*p*) All rock bursts should be classified as either large or small, as the evidence indicates. Time and location should be indicated when that information is available.

(*q*) Mr. Kuchta should send a weekly report to the applied physics branch, including data collected during the preceding week and information about the performance of the recorders.

5. After the completion of part 1 of the program, a change from standard to millisecond delays should be made. Any additional changes proposed by the applied physics branch or by the company, and agreed upon by both, should also be made at this time.

6. Part 2 of the program should be carried out using the same general procedure as outlined for part 1. Part 2 of the program should be continued until the effect of the changes outlined above can be determined. Particular attention should be given to differences in the number, intensity and time distribution of rock bursts.

Mr. Rockwell approved this program and arrangements were made to secure the services of one man on a full-time basis to be placed under Mr. Kuchta's

supervision. In addition, Mr. Rockwell stated that up to $4,000 could be made available by the company to cover expenses incurred by the applied physics branch while carrying out its part of the program.

It was agreed that during the third phase of the investigation the applied physics branch would assist with the instrumentation and analysis of results. The following supplies will be furnished by this branch:

1. 1,500 feet of microphone cable and cannon connectors as required.
2. Four spare geophones at the beginning of the program and as many thereafter as needed.
3. All spare parts, tubes and components necessary for repair and maintenance of the equipment.
4. One replacement amplifier to be kept at the workbench.

In addition to the equipment mentioned above, the applied physics branch will provide supervision and guidance for the collection and analysis of all data collected at Ahmeek. Comprehensive reports at the completion of part 1 and part 2 of the revised program will be supplied as part of this service.

Mr. BURKE. In regard to those reports, the Bureau's physicists stayed up there, I think, somewhere in the neighborhood of a year, and as I recall, they did not come up with any solution, but they did leave their instruments with the operator, and they did change the blasting hours so that men would be 2 or 3 or 4 levels from a level where they were going to blast. They thought because of this rock pressure that would be a good thing to do. As I understand it, not later than the latter part of July of this year from our staffman in that area, who is a former copper miner, the instruments are still being used in that mine.

In the statements that the subcommittee has taken in the field, some witnesses have tended to emphasize that fatalities in the metallic and nonmetallic mines are not as bad as they are in the coal mines. Well, God forbid that they should be. When the Congress of the United States would have a gory massacre take place before needed safety legislation is enacted, that would be a sad day. This subcommittee is under no such compulsion. You recognize the inherent dangers in the metallic mines and you are acquainted with the total inadequacies of the present mine safety codes coupled with the lack of enforcement of these codes.

While this bill does not give the Bureau of Mines the power to shut down the mine that the Bureau believes to be in violation of the Federal Mines Safety Code, as in the case of coal mines, yet it does give the Bureau of Mines the power to make an inspection as to unsafe conditions and to report these conditions relating to health and safety to Congress. This is a step in the right direction.

In reading the testimony taken in the field the following statements were made to the effect that:

The responsibility for Federal action in any health and safety activities has now been established in many fields. Some of the more objective examples of this are such Federal activities in the coal mines, Social Security Act, Food and Drug Act, the inspection services of the Department of Agriculture.

The Federal Government has every right to go into these fields and there is no argument with the fact that they are already in the fields enumerated. It is also a fact that the Federal Government has gotten into these fields after the States over the years have proven unable to cope with the situation. It is only then that the Federal Government has had to step in through legislation and try to do what your subcommittee is trying to do today. No one is attempting to supersede State agencies where they exist and where they are doing

an adequate job. I would like to point out to the subcommittee that since the Neely-McConnell bill has been enacted into legislation that the quality of the services rendered by the various State bodies as far as the bituminous and anthracite coal miners are concerned have improved immeasurably. This has been due in no small part to the help given them and the cooperation rendered by the Bureau of Mines. It has also had the effect of jacking up the States in their attempt to cut down accidents in the coal mines.

We have a first-class example of what happens when the Federal Government, through such a splendid agency as the Bureau of Mines, comes into a State. The net result has been an overall improvement in the enforcement of the codes. It has also led to greater and increasing appropriations and appointment of State civil service mine inspectors.

I would like at this point to commend Attorney General Arnold Olsen of the State of Montana for his excellent statement before your subcommittee. I would like to repeat for the record Attorney General Arnold Olsen's statement. It is not too long and I think it is very much to the point:

When the day comes that safety is cheaper than nonsafety to industry, accidents and industrially caused diseases will reach a new low. Specifically with reference to Montana, we have an Industrial Workman's Compensation Act which is so archaic and outmoded that in many cases an injured workman would receive more from the Department of Public Welfare than he could from his industrial accident insurance.

Montana must have a new and up-to-date industrial accident compensation law. We must have a law such as 45 other States of the United States have, fully recognizing that silicosis and other crippling diseases caused by industry are proper subjects for insurance coverage. Montana needs a law which has as its primary goal the rehabilitation of the injured workman; a law which will provide the injured employee with payments sufficient to maintain himself and dependents in a standard compatible with decency and health.

Industry has made some progress, but what progress made is little consolation in the face of a public-welfare bill of approximately $4½ million for silicosis alone; a bill brought about by unhealthy working conditions in industry; a bill which is referred to the taxpayers for payment.

Devastating diseases caused by contact with silica dust, exposure to lead, arsenic and other metals, as well as toxic vapors, liquids and gases, can no longer be passed off as inevitable. An intensified program by Montana's Industrial Hygiene Department, working in cooperation with the United States Public Health Service, the Federal Bureau of Mines, and representatives of industry, coupled with a new and realistic industrial workman's compensation law, accident and industrial disease ratio.

I am certain that the firsthand information your committee receives from the miners, union leaders, and representatives of industry will be of great value to you. I am personally looking forward to appearing before your committee at the earliest possible time, but would not impose upon the time allotted to my friends and neighbors, the miners of Butte.

Mr. John Bley, general manager of the American Chrome Co., Nye, Mont., before the subcommittee, made the following statement:

No amount of Federal legislation or control can cause individuals to cooperate and think to the limit of the elimination of accidents. Safety can only be achieved as each individual wants it. This of course means that wholehearted cooperation is required from each individual, to follow established practices and rules and provide practical suggestions to improve conditions.

I for one will not buy that. If that was the rule of this country, we would not have a Congress or a Senate, sheriffs, State police, patrolmen, or even school-crossing guards. I cannot buy that. We have to have laws.

Mr. METCALF. Would you allow me to interrupt here? Part of this bill does not have very much compunction in it and it provides for interchange of information so far as safety regulations and safety conditions are concerned. Do you not think that it would help the miners from one area, the employers and the labor alike, from one area to find out about what safety methods are being used in another area?

Mr. BURKE. Absolutely.

Mr. METCALF. So that passage of legislation providing for interchange of safety information would provide another means of wholehearted cooperation between areas and mining companies and members of various labor unions.

Mr. BURKE. That is right. Not only that, Mr. Chairman, but the United Steelworkers of America is not selfish in supporting these bills. It is interested whether or not they are organized. That is a service like others that we render to the people of our country. Air pollution is not our business, but we still render a service there. I think it is a splendid idea. The miner in Butte will know what the miner in New Jersey is contending with. The legislation will protect all of them.

In answer, I would like to state that no one in the steelworkers or myself are under any illusions as to what this mine-safety legislation is attempting to accomplish. We are well aware of the fact that safety is a continuing job day in and day out and never ends, but it is taking in too much territory, in my opinion, when the statement is made that safety can only be achieved as each individual wants it.

An individual has only so much control over the environment in which he works, I know that, and I worked in a mill. I know how much the individual has, and he has nothing as an individual. I have yet to meet a miner who wants to end up in the morgue before his full life has been lived out. Mine safety legislation is needed because some employers have failed to provide adequate safety conditions needed for the miners who are in their employ.

Mr. Bley states that mutual trust between the employer and the employee can bring about safety. No one can argue with that statement, however, it is only true up to a certain point. This mine-safety legislation is needed because the employers and the various State bodies have not done their duty as they should have done. For anyone to make the statement that "the present framework in the States for sound safety programs now exists" shows a total ignorance of the facts as they exist. I hope that the subcommittee will not be unduly influenced or attach too much importance to the testimony of Mr. Bley.

Mr. RHODES. Do you feel that is true of all States? Isn't there a single State in the Union where they have a decent safety setup?

Mr. BURKE. I am not saying every State. I mentioned New Jersey. They just passed one about a year ago. New York is another one. Minnesota is another one. But you see, sir, in some States, and I am glad you raised the point, it brings an answer to me that I would not have thought of.

A drugstore cowboy, so to speak, an ordinary citizen can be elected a mine inspector in some States. I think they should have mining experience and pass a test before they are in charge of my life or the

lives of the people that I represent, or anybody else's life. I think that your bills will take care of that angle.

Gentlemen of the committee, in answer to Mr. Bley, I would like to say this: If what Mr. Bley says in his testimony is true—and I would like to read another part of Mr. Bley's testimony:

No amount of Federal legislation or control can cause individuals to cooperate and to think to the limit of the elimination of accidents.

Now, gentlemen of the committee, I would like somebody then to explain to me why it was necessary for the States of Georgia, Mississippi, and Wisconsin to have comparative negligence laws, which means, gentlemen, insofar as I understand the laws to mean, that if an employee working for industry in any 1 of these 3 States should, for some reason or another, unconsciously violate the State safety laws or codes and meet with an accident that he or she would be penalized by the Workman's Compensation Commission by the loss of, and as I understand the figures to be in some cases, the loss of as high as 15 percent of his or her award. Gentlemen, might I say this to you, that it is my understanding that there are some more States thinking of the same type of legislation and I wish to submit for the record a photostatic copy of a debate on this subject that was held in Pennsylvania just recently, in fact, to be exact, November 4, 1956.

Mr. RHODES. Might I ask a question at that point? Do the United Steelworkers favor comparative negligence statutes like this?

Mr. BURKE. No, sir.

This is the original clipping from that paper:

LAWYERS DEBATE NEGLIGENCE LAW

COMPENSATION CHANGES ARGUED

County bar associations are staging a series of statewide debates on whether Pennsylvania should adopt a law of comparative negligence to govern accident cases.

State courts now operate under a contributory negligence system which provides that if a person is as much to blame as the conditions, then he is not entitled to compensation.

Under comparative negligence, the degree of responsibility is split on a percentage basis. There is a Federal statute of this type governing railroad employees and seamen. Georgia, Mississippi, and Wisconsin also have comparative negligence.

Two Pittsburgh attorneys staged the first debate last Friday in Farrell. David Olds, member of the rules committee of the Pennsylvania Bar Association, argued against the change. He was opposed by James P. McArdle, member of the board of governors of the National Association of Claimant Attorneys, who took the affirmative side.

The debates will help the bar associations decide on whether to back or oppose a proposed bill.

Similar legislation received a majority vote in the House during the last session but short of the required constitutional majority.

Another witness before the subcommittee professed fear as to the number of written rules needed to cover the whole country. In his opinion mine safety legislation would not be practical. Experience of the Bureau of Mines as far as the Neely-McConnell bill is concerned shows there is no great difficulty in the interpretation of such legislation and neither are they so voluminous that they are out of hand.

Mr. Fred Burnett, president of the Montana Mining Association, before the subcommittee, expressed great concern over the fact that an

inspector coming to a mine tends to compare your mine with other mines which might have much more difficult conditions than you have. A violation is a violation. A violation in an iron-ore mine or a copper mine, allowing for some differences that go along with the metal involved, is still a danger to the miner. If there were violations in any one mine and the Bureau of Mines inspector pointed these violations out to the mine owner or superintendent of the mine, I am sure that in the company's own self-interest they would correct these violations.

The statement rendered by Mr. James S. Umber, president of the Montana State AFL–CIO, drives home a strong point when he states:

> As far as I am personally concerned, I feel that our miners have waited too long for the legislation that your subcommittee now has under consideration. But it is never too late to correct a bad situation. Your subcommittee is to be congratulated for attempting to correct the deplorable conditions under which our miners have had to work.

Mr. Umber has solved the whole problem in a nutshell by the foregoing paragraph that I have taken the liberty of quoting.

So much for my comments as to the testimony rendered before your subcommittee. Those of us who are engaged in the field of mine safety, as far as metallic and nonmetallic mines are concerned, are dependent to a large degree on the reports of the Bureau of Mines as far as accidents and fatalities are concerned. I have certain data and information available to me that has been obtained through our contracts with various companies and operators so concerned. As far as the overall picture is concerned, this information is totally inadequate. It is only when such a bill or bills before the subcommittee is enacted that all of us will be able to obtain accurate and complete data as to the number of accidents and fatalities and their cause in the metallic mines. We are not able to do this at present. If nothing else was accomplished and this provision of the mine safety bill was enacted into legislation, it will be a tremendous help because we will then have hard facts and figures to go on and an accurate picture as regards accidents in these mines. We do not have them at present.

I specifically commend to the committee the retentions of sections A, B, C, D of the various bills before your subcommittee in any report or bill that the subcommittee reports out. I hope that sections 2, 3, and 4 are retained in any legislation or report recommended by the subcommittee. Sections 5 and 6 are of vital importance, as is section 7. As regards sections 8–A and 8–B, I have been informed by the Bureau of Mines that they have found these advisory committees lacking in the expectations as to the contribution that they supposedly can make. I feel that the advisory committee as set forth in sections 8–A and 8–B of these bills is a splendid idea and I know from the experience in industry with which I am familiar and with the Tennessee Valley Authority, with which Representative Elliott is thoroughly familiar, that these committees have been a good thing and have made an outstanding contribution.

However, if the Bureau of Mines believes that these committees have not lived up to their expectations, then this section could be eliminated from the bill without doing injury to the other sections of the bill. I hope that the subcommittee will call on the Bureau of Mines for a statement as to their feelings and experience with these

advisory committees and on the basis of the Bureau of Mines testimony then your subcommittee can act as it sees fit.

It is my sincere hope that the subcommittee will report strongly and favorably on one of these several mine-safety bills before the subcommittee; H. R. 9269, H. R. 9343, and H. R. 11376 are the same with the exception of H. R. 11376, which excludes quarries. Any one of these bills will serve the purpose.

I would like to ask a question of the committee or the chairman there. What is the interpretation of the Chair or the committee in regard to quarries? What is a quarry?

Mr. METCALF. I will say for Mr. McConnell, who left quarries out of his bill, that was done for the reason that he felt that quarries were covered by the definitions already in the legislation, and that it was unnecessary to include a quarry.

Mr. BURKE. What I am driving at, Mr. Chairman, is that you would not consider the open pits up in the Mesabi as quarries.

Mr. METCALF. I would not call those quarries.

Mr. BURKE. Or the big copper pit out in Utah.

Mr. METCALF. The term "metallic and nonmetallic mines and quarries" includes all types of mines and mining operations, but not limited to mines, quarries, and open-pit operations and strip mines, except it should not be deemed to include coal and lignite mines.

So you see open-pit mines are included under this legislation, and they are not, as I understand it, under the general term "quarries," and specifically open-pit mines would be included under this legislation.

Mr. BURKE. I just wanted to raise that question.

Mr. METCALF. If there is any question about it, certainly you have raised it.

Mr. BURKE. I did not want to get caught behind the door, you know.

Mr. METCALF. If some legislation comes out of the committee, we would make it clear just exactly what we mean to cover, and what we mean to exempt.

Mr. BURKE. Thank you very much.

I hope that the work of the subcommittee will not die with the 84th Congress, and that the 85th Congress will see fit to enact one of these mine-safety bills into legislation. The miners in the metallic and nonmetallic mines are certainly in need of it. I thank the subcommittee for the opportunity to present this statement.

Mr. METCALF. You have with you some of the other witnesses. Do they want to testify at this time or are they with you to help you answer questions?

Mr. BURKE. Mr. George Elliott from Birmingham, Ala., representing the iron miners from that area, would like to make a short statement.

Mr. METCALF. Do you have a statement, Mr. George Elliott?

Mr. GEORGE ELLIOTT. I do not have any prepared statement, Mr. Chairman, but I would like to say that we have long desired the metal miners coming under the United States Bureau of Mines. Since the coal miners were brought under the United States Bureau of Mines we are working closely with the United Mine Workers in the Birmingham Bessemer district, and we know there has been a lot of improvement for the miners in the coal mines.

We do not have any faith whatsoever in our State mine inspectors, or in the State mine inspection setups. I can give you some very good reasons why we do not have any faith in them.

We have mine safety rules that for the most part are not enforceable. The State mine inspectors go in the mines and make an inspection, and for instance, we had rule 43 of the State mine safety rules which says that a man shall not be required to load, blast, or drill alone where he is out of hearing distance or calling distance of other employees. We found that they had men working under that condition and had been working under that condition for approximately 2 years. The State inspectors, along with the company inspectors, had made regular inspections of those mines and had made no report of any violations.

We filed a grievance under the grievance procedure of our contract, and we have taken it to arbitration. We forced the company to put a man on with those people. In the arbitration hearing the State mine inspectors came up and testified for the company. We had to take the company to arbitration twice on that particular case before they put them on at all of the places where they had them working by themselves. Both times the State mine inspectors came up and testified for the company.

In 1953, we had a condition in one of the ore mines where it was not in our opinion a question of bad air, but it was a question of not having enough air in the mines. I went down in the mines myself, along with the State mine inspector and inspected this area, and I found brattis cloths that were torn, that had holes in them big enough so that you could throw a hound dog and a litter of pups through and never touch a hair.

Mr. RHODES. What kind of a cloth is that?

Mr. GEORGE ELLIOTT. That is where they brattis up the worked-out places. It is like you see these drapes over here. You have the air coming down to get to the men who are working, and they brattis up these places to keep the air from getting out into the worked-out places, so that it won't lose the air before it gets down to the men. They did not have the proper brattising down there.

The State mine inspector gave us a report then of that inspection tour of the mines, and I would like to introduce this in evidence. There is no way in this report that the State mine inspector puts out, there is not enough room on there, and they could not possibly put something down on there that is wrong. There is only room on there to say yes and nothing else, and that is exactly what they did.

On that particular thing, the report that they made was that they had inspected the place and found no violations. Well, it was certainly a violation of the State rule. They did not have proper brattis work done, and I know, because I was along with them, that they did not inspect all of these places that they made the report on. I would like to introduce this for the information of the committee.

Mr. RHODES. You mean there was not sufficient oxygen in the areas of the mine where they were working, and it was because of the defective brattis work?

Mr. GEORGE ELLIOTT. That was one of the reasons for it. Another reason was that they did not have enough booster fans. The exhaust was too far away from the intake, and they were losing a lot of air before it got to the working places where the men were working.

Mr. METCALF. Just a moment, please.
The report will be included in this point in your testimony.
(The report is as follows:)

METAL MINE INSPECTION REPORT, JULY 7–8, 1953

STATE OF ALABAMA, DEPARTMENT OF INDUSTRIAL RELATIONS, DIVISION OF SAFETY AND INSPECTION, BIRMINGHAM

Name of mine: Wenonah No. 11; county: Jefferson; drift, slope, or shaft: slope.
Name of operator: Tennessee Coal & Iron Division of United States Steel Corp.; address: Fairfield, Ala.
Name of superintendent: P. J. Zukow; address: Wenonah Mine, Bessemer, Ala.
Name of mine foreman: W. O. Brown; address: Wenonah Mine, Bessemer, Ala.
Employees: Surface, 26; inside production, 250; inside maintenance, 144; total, 420.

SUMMARY OF INSPECTION

1. Access: (*a*) Number of openings, 2; (*b*) egress, yes; (*c*) number of hoists, 1; (*d*) exit distance, yes; (*e*) stairways, O. K.; (*f*) walkways, O. K.; (*g*) ladders, ——; (*h*) platforms, O. K.; (*i*) check in and out, yes; (*j*) direction signs, yes; (*k*) abandoned entrances—(1) fenced, ——; (2) posted, yes.
2. Ladders: (*a*) Rung spacing, ——; (*b*) stringers, ——; (*c*) condition, ——. Fire prevention: (*a*) nonflammable: (1) Portal structures, yes; (2) mine opening door, ——; (*b*) flammable storage, yes; (*c*) fire and safety diagram, yes; (*d*) fire drills, yes; (*e*) alarm system, yes; (*f*) water supply, O. K.; (*g*) sand supply, O. K.; (*h*) entinguishers, O. K.
4. Hoisting: (*a*) Gates: (1) Ground landing, O. K.; (2) level landing, O. K.; passageways, O. K.; (*c*) deflecting screens, yes; (*d*) safety devices, yes; (*e*) Man trips, yes; (*f*) safety rope, yes; (*g*) drags, ——; (*h*) inspection record, yes.
5. Hoisting engine: (*a*) Drum flanges, yes; (*b*) turns on drum, yes; (*c*) Brakes, O. K.; (*d*) indicator, yes; (*e*) safety devices, yes.
6. Mechanical: Guarding, O. K.
7. Tools: Condition, O. K.
8. Hoisting ropes: (*a*) Examination, yes; (*b*) lubrication, yes; (*c*) record, yes.
9. Signal system: (*a*) Main, electric; (*b*) alternate, phone; (*c*) maintenance, O. K.; (*d*) standard code, yes.
10. Hoisting engineer: (*a*) Extra engineer, yes; (*b*) examination posted, ——; (*c*) rule 12 posted, yes.
11. Haulage: (*a*) Trolley-wire suspension, O. K.; (*b*) guarding, O. K.; (*c*) gongs, O. K.; (*d*) sander, yes; (*e*) headlights, yes; (*f*) rear lights, markers; (*g*) racked cars, no; (*h*) drags, ——; (*i*) sprags, brakes; (*j*) rerailers, yes; (*k*) rail bonds, yes; (*l*) switch throws, O. K.
12. Explosives: (*a*) Class, 1; (*b*) containers marked, yes.
13. Magazines: (*a*) Class, A; (*b*) location, O. K.; (*c*) pounds stored, 2,900; (*d*) construction, O. K.; (*e*) barricades, yes; (*f*) housekeeping, O. K.; (*g*) lighting, O. K.; (*h*) danger sign, yes; (*i*) detached storage distance, O. K.
14. Explosives-transportation: (*a*) Manual, O. K.; (*b*) conveyance, O. K.; (*c*) containers, O. K.; (*d*) capped fuse, yes; (*e*) smoking open lights, none; (*f*) supply, 2½ days; (*g*) powder bags, yes; (*h*) detonator containers, O. K.
15. General blasting: (*a*) When, 2:20 p. m.; (*b*) by whom, head miner; (*c*) electric or fuse, fuse; (*d*) primers, O. K.; (*e*) stemming, clay; (*f*) loading, O. K.; (*g*) igniters, O. K.; (*h*) misfires, O. K.; (*i*) "bootlegs," ——; (*j*) block holing, ——; (*k*) robbed holes, O. K.; (*l*) No. 6 strength, ——; (*m*) 18-fuse limit, yes.
16. Electric blasting: (*a*) Battery, ——; (*b*) circuit, ——; (*c*) blasting switches, ——; (*d*) safety switches, ——; (*e*) lock, ——; (*f*) wiring, ——; (*g*) alarm, yes.
17. Drilling: (*a*) Wet, wet; (*b*) blocking, ——; (*c*) staging, ——.
18. Mechanical loading: (*a*) Scraper: (1) Anchorage, ——; (2) rope guards, ——; (3) signaling, ——; (*b*) power shovel: (1) Bucket block, ——; (2) operating platform, ——; (3) muck sloped, ——.

19. Timbering: (*a*) Supply: (1) Yard, yes; (2) working places, yes; (*b*) cap pieces, yes; (*c*) headers, yes; (*d*) separation rule, 5 foot pinning; (*e*) face distance, 5-foot pinning.
20. Electrical: (*a*) Marked switches, yes; (*b*) insulated platforms, yes; (*c*) locked switches, yes; (*d*) switch tags, yes; (*e*) wire suspension, O. K.; (*f*) height, O. K.; (*g*) conduct, ——; (*h*) guarded, yes; (*i*) buried cable, ——; (*j*) grounding, O. K.; (*k*) extension lamps, O. K.; (*l*) underground station: (1) Fireproof, yes; (2) separate split, yes; (3) oil pit, O. K.; (4) danger signs, ——; (5) fenced, yes; (*m*) lightning arresters, yes.
21. Ventilation: (*a*) Fans: (1) Force, ——; (2) exhaust, yes; (3) reversible, ——; (*b*) natural, ——; (*c*) fireproof, yes; (*d*) water gage, 3½ inches; (*e*) booster, yes; (*f*) auxiliary, yes; (*g*) self-closing doors, O. K.; (*h*) stoppings, O. K.; (*i*) condition, O. K.
22. Dust control: (*a*) Water on drills, yes; (*b*) sprinkling: (1) Before blasting, ——; (2) after blasting, yes; (3) mucking, O. K.; (*c*) sprays: (1) Dump, yes; (2) crusher, on surface.
23. Illumination: (*a*) Landing, O. K.; (*b*) machinery rooms, O. K.; (*c*) pumping stations, O. K.
24. Communications: (*a*) Telephones, ——.
25. First aid: (*a*) Training, yes; (*b*) equipment, yes; (*c*) place, yes; (*d*) personnel, yes.
26. First-aid material: (*a*) Stretchers, yes; (*b*) blankets, yes; (*c*) kits, yes.
27. Mine rescue: (*a*) Oxygen breathing apparatus, yes; (*b*) condition, O. K.; (*c*) rescue crew, yes; (*d*) training, yes.
28. Protective apparel: (*a*) Goggles, yes; (*b*) respirators, yes; (*c*) hats, 100 percent; (*d*) shoes, 75 percent.
29. Health requirements: (*a*) Change house, O. K.; (*b*) separate rooms, yes; (*c*) lockers, yes; (*d*) chains, ——; (*e*) drinking water, O. K.; (*f*) bathing facilities, O. K.; (*g*) housekeeping, O. K.
30. Safety rules: (*a*) Printed, yes; (*b*) distributed, yes; (*c*) enforced, yes.
31. Dangerous and safe practices, ——.

REMARKS AND RECOMMENDATIONS

Accompanied by Chief Mine Inspector Benefield, Mine Inspector Hall, and Mine Captain Brown.

No violations were noted.

Was accompanied by George Elliott, international representative of United States Steelworkers of America and company representatives, as shown above, in check of ventilation in fifth right panel, July 7, 1953.

H. T. WILLIAMS, *Inspector.*

Mr. RHODES. There was insufficient oxygen in this particular mine, is that right?

Mr. GEORGE ELLIOTT. I am going to get to the point about the testing in just a minute.

The State mine inspector had an instrument there that he was using to check for air. I tried to get him to check back behind the booster fan, to see how much air was in there, and he said he could not get a reading there, and he would have to get out in front of the fan. This instrument that he used to check with was a sort of a windmill affair, and of course if you hold it out in front of a fan, if you were in a room that was closed up airtight, you would get a reading on it. But he would not take the reading back behind the fan.

Now, I asked the company to let the union hire an air engineer. I am not an air engineer, and I don't think any of the miners there are engineers. I asked if they would let a man hired by the union go down there to check and they refused to do that.

Next I went to the United States Bureau of Mines, a Mr. Harry Smith, and I asked him if he would agree to come down in the mines and check the ventilation in this fifth right east No. 11 mine. He said that he could not come down there unless the company agreed. So he

asked the company, the industrial relations man for the company if they would permit a man from the United States Bureau of Mines to go in and inspect this place. They refused to let him go in and inspect it.

The case went on to arbitration and we asked the company to let a man from the United States Bureau of Mines, any man from the United States Bureau of Mines act as an arbitrator in the case and they refused to let a man from the United States Bureau of Mines act as an arbitrator.

It is clear to us that they did not want a man in there that knew anything about it, that would make the right kind of report on it. They did not want a man who would report the facts.

We have in our mine safety rules a provision that says where there is powder, unexploded powder found in muck piles, that all loading will stop. We know they are doing that every day on every shift. They are loading out of muck piles where they have unexploded powder. The State mine inspector knows it and we went to him and talked to him about it, but when he goes through the mines we get a piece of paper like this, or we don't get one, even, and the only time we get one is where we specifically ask for one like we did in this particular case. But he finds everything O. K.

We have a rule there that says that a motor runner except in emergency shall take signals only from his trip rider. But they have any and everybody giving signals to the motor runners, and the State mine inspector knows it, but he reports there is no violation.

Mr. METCALF. I wonder if you would tell us what a motor runner is. Is he the man who operates the motor?

Mr. GEORGE ELLIOTT. Yes.

Mr. METCALF. What is his trip rider?

Mr. GEORGE ELLIOTT. The trip rider is the man that they use to throw the switches and signal him when to move the motor.

So we know that those violations are going on, and we know that the State mine inspectors are not doing anything about it. We feel that they are under the complete domination of the company, and we feel that it would be very dangerous if we had a bill of the kind that is before the subcommittee or the various bills. They are not as good a bill as I think we ought to have. But at least they are bills where there will be records kept of what violations there are, and whether the company has corrected those violations or not. It will give us an opportunity to have exchanges of information with various miners over the country.

On the question of silicosis, and pneumoconiosis, I notice that in this chart that he had here this morning, it said 706 cases of silicosis were in Alabama from 1950 until 1954. Of course, you don't get a true picture of the silicosis problem by getting a report from the industrial relations department where I assume, or I think that he said that he got that report from that place. You don't get a true picture of the people who have siliosis, and pneumoconiosis from that source. We know that we have people there who have been to doctors, and have been told that they have silicosis who will not file claim for their unemployment compensation under the workmen's compensation law, because they know they will be barred from a job not only with that company, but with all other companies, and will be denied

their right to make a living for their families. Out of fear, they won't file a claim. Of course, we have a lot of cases where the people have made claims, and we go to court and we lose those. I don't imagine that those are reported by the industrial relations department. It is hard for us to win cases where you have to go to court because of the trouble that we have of getting doctors who are willing to go and testify against the company. It is almost impossible to get that done.

We have a lot of other people, and the man will be over for one reason or another, and he is examined before he comes back to work and it is found that he has silicosis. They will give him a job on the surface, and after he works there for a year and the statute of limitations has got him, he can't do anything. So we have people in that category that would not be reported there.

We have a lot of other people, a man who has been around people with silicosis can almost know by talking to him that either he has silicosis or he has TB or something wrong with him, and they get to the point where they can't hardly talk. They even carry these atomizers, I believe as they call them, around with them to pump air into their mouths. I have seen them sitting in union meetings, and they have to continuously take that out and pump air into their mouths. The very breath of life has been taken away from them from working in these places where they don't have the proper ventilation and the proper wetting systems to keep down silica dust.

I noticed one of the gentlemen here this morning when he was talking about the matter if you could keep the silica dust down to a certain percent that a man would not be subject to contracting silicosis, and that he hoped they would be able to keep it down to that percent provided it was economically feasible.

So far as I am concerned, and the miners in Alabama, and I know the miners all over the country are concerned, I don't think the question of whether it is economically feasible or not should enter into it when we are talking about human beings and human life.

I think, Mr. Chairman, that is about all I have to say. I want to thank you for listening to me, and I hope this committee will report this bill out favorably.

Mr. METCALF. Mr. George Elliott, we are very glad to have you here and to have your contribution.

Now, Mr. Burke, do you want the balance of the gentlemen who are here to testify?

Mr. BURKE. No; I think that we have completed.

Mr. METCALF. They will all be available for questioning.

Are there any questions?

Mr. ELLIOTT. I would like to ask Mr. George Elliott a question or two. You represent the steelworkers of the Birmingham area?

Mr. GEORGE ELLIOTT. That is right; Birmingham and Bessemer.

Mr. ELLIOTT. How many steelworkers are there in that area?

Mr. GEORGE ELLIOTT. I suppose that there are around 40,000 steelworkers. They are not all miners.

Mr. ELLIOTT. How many iron-ore miners would you say?

Mr. GEORGE ELLIOTT. Roughly, I would say there are around 3,500.

Mr. ELLIOTT. Do they all belong to the same local union?

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Mr. GEORGE ELLIOTT. No, sir; there are approximately 700 of them that belong to district 50 and about 180 that belong to the Mine, Mill, and Smelter Workers.

Mr. ELLIOTT. The others belong to the United Steelworkers?

Mr. GEORGE ELLIOTT. That is right.

Mr. ELLIOTT. And they work in whose mines?

Mr. GEORGE ELLIOTT. In the Republic Steel mines and Tennessee coal and iron division of United States Steel.

Mr. ELLIOTT. Are there not several others?

Mr. GEORGE ELLIOTT. Not any that we have.

Mr. ELLIOTT. Sloss Sheffield; do they have any?

Mr. GEORGE ELLIOTT. That is United States Pipe Co.; that is in the Mine, Mill, and Smelter Workers. That is the only one that I know of. They did have the Ruffner mines working for a while, but I don't believe they are.

Mr. ELLIOTT. Woodward Iron Co.

Mr. GEORGE ELLIOTT. They are in district 50.

Mr. ELLIOTT. So Republic and the T. C. I. division of U. S. Steel are the only two steel companies where the steel workers represent the employees?

Mr. GEORGE ELLIOTT. That is right.

Mr. ELLIOTT. Do you actually work in the mines, Mr. Elliott?

Mr. GEORGE ELLIOTT. No, sir; not now. I used to.

Mr. ELLIOTT. Where did you work?

Mr. GEORGE ELLIOTT. I worked at the Ishkooda division. I worked both inside and on the surface for about 11 years.

Mr. ELLIOTT. What do you do now?

Mr. GEORGE ELLIOTT. I am staff representative for the United Steelworkers of America.

Mr. ELLIOTT. Have you had an opportunity to be in any of the mines lately?

Mr. GEORGE ELLIOTT. Just a couple of weeks ago.

Mr. ELLIOTT. Did you make an intensive investigation of the safety conditions in the mines at that time?

Mr. GEORGE ELLIOTT. I went down there to investigate a particular thing that we were involved with, this rule 43, where the company had put in a microphone and was trying to get around a rule by putting in a microphone and saying that the man was in hearing distance because of having a mechanical piece of equipment in there, a microphone.

Mr. ELLIOTT. Who inspects the iron-ore mines around Birmingham for safety conditions? Does the State Bureau of Mines of Alabama do that?

Mr. GEORGE ELLIOTT. That is right. I don't know whether you call them a "State bureau of mines." They work out of the industrial-relations department.

Mr. ELLIOTT. That is the Alabama Bureau of Mines. It is the chief mining inspector; is it not?

Mr. GEORGE ELLIOT. Mr. Williams it is.

Mr. ELLIOTT. They call it the office of the chief mining inspector?

Mr. GEORGE ELLIOTT. That is right.

Mr. ELLIOTT. How often are they required to inspect those mines?

Mr. GEORGE ELLIOTT. They say in here that the mines are subject to monthly inspection. But they don't actually make them that often.

Mr. ELLIOTT. There is no monthly inspection made by the State?

Mr. GEORGE ELLIOTT. No, sir; they haven't been in there except to go into a specific mine to investigate a certain thing. There are some mines that they haven't been in in a couple of months or more now.

Mr. ELLIOTT. And there are no inspections by the Federal Government in those mines, by the United States Bureau of Mines?

Mr. GEORGE ELLIOTT. That is right.

Mr. ELLIOTT. Do you think this bill or these bills now before us would promote or go a long way toward the promotion of better safety conditions in those mines?

Mr. GEORGE ELLIOTT. I certainly do.

Mr. ELLIOTT. You have read the bills and you have studied them and that is your judgment about it?

Mr. GEORGE ELLIOTT. Yes, sir.

Mr. ELLIOTT. That is all, Mr. Chairman.

Mr. RHODES. Mr. George Elliott, this mine inspector who went down in the mine that you were talking about, was he the chief mine inspector or was he just one of the people who worked in the office?

Mr. GEORGE ELLIOTT. He was the chief inspector.

Mr. RHODES. And he is the one that would not test the aid except in front of the fan?

Mr. GEORGE ELLIOTT. That is right.

Mr. RHODES. How does he derive his position? Is he appointed or elected or what?

Mr. GEORGE ELLIOTT. They are appointed.

Mr. RHODES. What did you say his full name was?

Mr. GEORGE ELLIOTT. H. T. Williams, I believe, I think he signed.

Mr. ELLIOTT. The report you submitted for the record is signed by the man?

Mr. GEORGE ELLIOTT. Yes.

Mr. RHODES. Did you ever talk to Mr. Williams' superior whoever he was and told him about this situation?

Mr. GEORGE ELLIOTT. Yes, sir; I have talked to his superior, I would say you would call him that, the man who is head of the department of industrial relations, Mr. Wells.

Mr. RHODES. Did you have any luck when you talked to Mr. Wells, or did Mr. Wells do anything about the situation that you described?

Mr. GEORGE ELLIOTT. He has never done anything about it so far as I know.

Mr. RHODES. That was an inspection of Winona No. 11 of Tennessee coal and iron division; is that right?

Mr. GEORGE ELLIOTT. Yes.

Mr. RHODES. And the date was July 7 and 8, 1953; is that correct?

Mr. GEORGE ELLIOTT. That is right. July 7 is the date we made the inspection and he sent the report out on the 8th.

Mr. RHODES. Have you been in this mine since that time?

Mr. GEORGE ELLIOTT. I don't believe I have been in that particular mine.

Mr. RHODES. Do you know whether the conditions that you mentioned with regard to the blattis work have been corrected?

Mr. GEORGE ELLIOTT. They have quit operating that particular section, the fifth right east. They are not operating that now but I understand from talking to the various safety committeemen and

grievance committeemen from the mines, that they still have the same problem on their blattis work.

Mr. RHODES. Do you have the same problem with Republic Steel mines as you do with the mines of the Tennessee Coal & Iron division?

Mr. GEORGE ELLIOTT. We do on certain problems but on the question of ventilation we haven't had that problem at the Republic mines. Now, I was down in the Republic mines about a couple of weeks ago and the ventilation is good in those mines.

Mr. RHODES. You mentioned a situation where some of these workers are staying on the job even though they are in bad health because of silicosis. Do you mean that they do that rather than take the workmen's compensation and get off the job and get on to another job?

Mr. GEORGE ELLIOTT. That is the problem. If they get off of that job, they don't get on another one.

Mr. RHODES. They don't get on another mining job?

Mr. GEORGE ELLIOTT. They don't get on any job.

Mr. RHODES. Why is that?

Mr. GEORGE ELLIOTT. Because that company won't put them to work someplace else and no other company will put them to work anywhere else.

Mr. BURKE. It is the secondary responsibility, Mr. Congressman. The second employer then is responsible in case you die. You have to prove then, or he has to prove, that it happened in his plant and what if you go to work in a foundry?

Mr. RHODES. That is the same reason why so many plants require physical examinations before they will put anybody to work, of course.

Mr. GEORGE ELLIOTT. I might say this, Mr. Congressman, that we have recently had the problem of people that have filed claim for silicosis or workmen's compensation—they get that under the silicosis bill—who are drawing a certain amount of money every 2 weeks and it is not very much. The company has agreed for certain of those employees if they will sign a statement waiving their workmen's compensation and sign a statement that they will never from now on henceforth and forevermore enter any suit against them for any claim for silicosis or pneumoconiosis, that they will give them a job.

So far they haven't called any of them to give them a job, but they said provided the men would do that they might be able to give them a job.

Mr. RHODES. None of those contracts have been tried out in the courts, I guess; have they? Nobody has ever brought a suit on those contracts to see whether they are valid or not?

Mr. GEORGE ELLIOTT. No; because they haven't given anybody a job yet so far as I know.

Mr. BURKE. Mr. Chairman, may I inject in there along with George's statement that there is one other angle. We have been dealing mostly with the workmen's compensation angle in this silicosis problem. There is also this: They will get you to accept insurance, the payment of insurance instead of filing claim for workmen's compensation. That has a tendency then to void any claim for workmen's compensation because they have you on the record then for collecting insurance for that illness.

Mr. GEORGE ELLIOTT. There is some of that that we are suspicious that that is what happened. I would not want to say for sure that it has, because I don't have any proof on it.

Mr. RHODES. How long can a person draw workmen's compensation in Alabama?

Mr. GEORGE ELLIOTT. It is according to what he is drawing it for. If he is totally disabled, he can draw it for 300 weeks. It is scaled according to what he has wrong with him.

Mr. RHODES. I am wondering if your best remedy is not to talk to the governor or the legislature and do something about your workmen's compensation law?

Mr. GEORGE ELLIOTT. Don't think we haven't been doing that. We haven't had a lot of luck with it.

Mr. RHODES. It is a very bad situation when you have men working around with silicosis who are afraid to apply for workmen's compensation when you have the law there which is supposed to protect them.

Mr. BURKE. Mr. Congressman, might I ask you a question? Do you know of any State that could enact a law that would compel an employer to hire me if I have silicosis?

Mr. RHODES. If you are on workmen's compensation and you are drawing rates like are paid in the State of Arizona, for instance, you do not have to get a job. That is what I say, I wonder if perhaps your remedy is not in doing something about your workmen's compensation laws, instead of trying to keep these men on the job when they have been exposed to silicosis.

Mr. BURKE. We don't happen to be in Arizona, and we don't even have that situation.

Mr. GEORGE ELLIOTT. The only way we can get any improvement in our workmen's compensation law is where there is some kind of teeth put into the safety rules that will make the company live up to the safety rules. If they have to do that, then they would probably be willing to go before the legislature with us and help us get the workmen's compensation laws raised.

Mr. RHODES. You mean that the situation in Alabama is such that there is nothing that you can do to get these rules enforced by the mining inspector?

Mr. GEORGE ELLIOTT. We have been able to get them enforced, but not by the mining inspectors. We shut the place down a few times and got them enforced, and that is a wildcat strike.

Mr. RHODES. It is kind of painful, then?

Mr. GEORGE ELLIOTT. It sure is.

Mr. BURKE. Mr. Chairman, I just would like to intercede here, that George Elliott mentioned about that air-conditioning in 1953. That was to the point of a stoppage of work and George called me and told me about it. They had been fighting this thing out for quite some time. I called Washington here, the Bureau of Mines, and I had them intercede for us. They got a hold of their man down in Birmingham, and I called George back, and I told him.

Nothing came of it. They told him that they were building another shaft over on another mountain, an air shaft, and they were going to put another fan in. I don't know whether I am correct in saying this or not, but I asked you this morning if they have built that shaft yet.

Mr. GEORGE ELLIOTT. They have the shaft built, but it is so far away from a lot of the working places that it doesn't furnish adequate air.

Mr. BURKE. Not where you were originally complaining in 1953?

Mr. GEORGE ELLIOTT. I haven't been down there to that particular heading since that time, and I would not know what it is. I am sure that they don't have air in there now.

Mr. RHODES. The point I am trying to make, Mr. Chairman, is that even if we pass these bills, which are before this committee, the situation still is not going to change to the extent that your State governments are going to do what they should do with regard to workmen's compensation or with regard to enforcing the mining laws. It seems to me that there should be a double-pronged attack here that probably the main prong in each individual State is to have people like you, and I am not saying you have not done what you can, but to continue to do what you can to make these State mining inspectors enforce their own laws. There is not very much we can do about that particular phase of it.

Mr. BURKE. Mr. Chairman, we are not here asking you to do something for us, or our miners in the line of workmen's compensation. As I understand the numerous bills before Congress, it is for the purpose of having the Bureau of Mines inspectors get information for you people; is that correct? That is the way I understand the bills.

Once we get that, then we will do what you have suggested. But as of right now, we cannot get that from the Bureau of Mines, whether it be in Washington, the United States Bureau of Mines or a State bureau of mines or from a United States Department of Labor, or a Commonwealth department of labor, or a company.

Mr. RHODES. Do not your locals know about the accidents that occur to their own members?

Mr. BURKE. Absolutely not.

Mr. RHODES. You mean the members do not report the accidents through the local to the United Steelworkers?

Mr. BURKE. Occasionally, yes; now we have just changed our constitution in our last convention in Los Angeles, which now makes it compulsory, or mandatory of the local union to appoint or elect a safety committee or a safety and health committee, whether it be a mine or steel plant. They know what they are supposed to do. They get the information from my department and they know what they are supposed to do. We have forms, accident forms.

I can cite you an instance where the FBI was kept out of a steel mill where we suspected sabotage in Gary, Ind., during the Second World War. The city firemen of Gary, Ind., were not allowed into that plant. There was an explosion, and we lost four members in that explosion. We threatened to strike that time to get in there, and Mr. Hood was the head of the United States Steel Corp. then and I had Phil Murray call Mr. Hood to tell him what happened down at Gary and even that did not do any good.

But the FBI was not even allowed in there to investigate that accident. There was an explosion in an old turbine room. Thank God it happened at lunch time or I don't know how many men would have been killed. They were on a construction job in that engine room and they had these old gas turbines, or old gas engines.

Somehow or other we still to this day don't know what ignited that one engine and blew the whole works up.

Mr. RHODES. You will, through your locals, be able to gather this data concerning accidents in the future, though, will you not?

Mr. BURKE. Without the help of some legislation?

Mr. RHODES. Yes.

Mr. BURKE. No. I will be honest with you, regardless of the bill now, let us talk off the record. I give you my honest-to-God opinion, no. I cannot do it.

Mr. RHODES. Do you want to tell me why you cannot?

Mr. BURKE. They won't give it to us. I can only ask, and then we have a dispute.

Mr. FJARE. What do you mean, they won't give it to you?

Mr. BURKE. The company.

Mr. FJARE. We are talking about the locals.

Mr. BURKE. The local will get what they can pick up, but I mean the actual facts. Occasionally, their report to me will correspond with the company report or a report they get from the company, but that is not general. In fact, I cannot say that is in the majority. We don't get it from United States Steel. I will tell you one corporation and I am going to irritate you two gentlemen, but it is Jones & Laughlin, they are the only ones who will give us the complete accident data.

In fact, we have what we call a superduper committee, the top officials of the corporation in the downtown office, with representatives from our various plants that sit down monthly and go over accidents in the plant. We are talking about a principle and not an operation, you see. But it applies the same in the coal mines with Jones & Laughlin. But they are the only ones who will do it.

Our safety committeemen are called by plant guards, and supervisors are instructed to call the safety committeeman whether he is on turn or off turn, to come out, there has been an accident, whether it be a fatality or an injury or just property damage. He is called out and they come out.

But I cannot tell you gentlemen that in the majority of cases that will happen. I could not even tell you that 51 percent of our industry gives us that information. I just cannot do it. My files are open to you gentlemen any time at all, 1104 Commonwealth Building, any time at all. I have them all there, and the reports that I have are available to you.

But as I say, if we had what you are attempting to do, we will get that, no doubt, from you people through the congressional records, and so forth. We are in business all of these years in the safety and health department of my organization. Do you know that I cannot tell each one of our international board members, 29 of them, or my international officers how many different types of accidents I have in a district because of the lack of that information and because of the lack of the cooperation on the part of the employer?

I have had my people threatened with time off for going into areas where there has been accidents. I am not trying to make a story here for you to impress you to give me a bill for miners. I am telling you facts. They are honest to God facts.

I just don't have it. I tried to get it written in this last contract that they made us strike for. They said, "Absolutely nothing." Do you know what I came out of those negotiations with? "We will set up another committee, Burke, and you be the chairman for the United Steelworkers, and our supervisor of safety and health will be the chairman for the corporation."

What have I got? I have got a moot subject, I have got more committees now than I know what to do with. I want to get something done. I want to be able to tell the district director in my international office, that district 1 in New England, this plant, and that plant and so forth in the overall picture in district 1, "You have had 5,000 eye cases and 1,000 back cases, and you have had 10 fatalities."

I am in no position to do that. I cannot even get it from the States.

Mr. ELLIOTT. The United States Bureau of Mines does not have it either as I understand from the testimony?

Mr. BURKE. No, sir.

Mr. ELLIOTT. I believe the testimony this morning was that only about 75 percent of the people that were sent questionnaires answer them.

Mr. BURKE. I question that figure, Congressman. I question that figure.

Mr. ELLIOTT. That was the testimony though; was it not?

Mr. BURKE. That is what he said, 75 percent, but I question that figure. Here is the National Safety Council which I am an officer of and it is not compulsory for employers to be members of the National Safety Council and the figures that they publish in their yearly book are not a true picture of the accidents in this country. The figures that they get from their membership is not the true picture because not all members of industry are members of the National Safety Council regardless of what industry they come from.

I have fought that out with Ned Dearborn until I am blind.

Mr. RHODES. Do you have access to the Bureau of Mines' figures, of 75 percent who do report?

Mr. BURKE. No, sir. I testified that I could not get that. I cannot even get it from the States. We have a bureau of mines in Pennsylvania, and I cannot get their figures.

Mr. FJARE. Because they do not have it or they will not give it to you?

Mr. BURKE. We have a very small group of miners in Pennsylvania, but they just won't give it to me.

Mr. FJARE. They refuse?

Mr. BURKE. That is right.

Mr. RHODES. Did the United States Bureau of Mines refuse, too?

Mr. BURKE. Yes, sir.

Mr. METCALF. Did you ask Mr. Johnson for figures?

Mr. BURKE. I have asked Mr. Johnson once for a report of the area that he was in charge of, in the Duluth area. That he sent me. There was a printed copy and I have it with me, incidentally. That is the Lake Superior district. But the overall figures, I want the entire United States. I am only interested in my organization's membership so I can tell my district directors, "Now look, Earl Bester, you up there in Duluth, Minn., you have got to get on the ball. Those guys in the Upper Peninsula, what goes on up there, and how come so many fatalities?"

The reports that I get—I have two reports, forms 263 and 264. One is the investigation report. That is for the safety committeeman. He will investigate the accident and any information that he can gather he sends in to me.

Now, if I should happen to check with the management, I could find out that that is the wrong information, because I have called the companies or wrote them a letter about an accident and they say, "Well, Burke, look, that is not the way it happened." I called Dan Farrell, the supervisor of safety for the United States Steel and I talked to him on George's fan down there, and I get no satisfaction.

Mr. FJARE. Now, you are approaching what to me is a very interesting part of this discussion. Let us suppose we passed this bill and you get the information you want. Then what happens?

Mr. BURKE. Then what happens? Then I notify our district directors.

Mr. FJARE. I am assuming that a majority of your problems in safety are going to be solved by the enactment of this legislation.

Mr. BURKE. In the sense that we will have information; it is not obtainable now.

Mr. FJARE. What happens after you have the information? I am talking about you, now, as organized labor.

Mr. BURKE. All right, then I teach in universities in the summer and I teach our people and I have classes in safety and health. I teach at Indiana University at Bloomington, and at Ohio State and Miami University in Ohio. I have been up in New England, and we don't have the universities there. I also teach at Penn State. Now, I tell these people that here is what is happening in the State of Pennsylvania.

Mr. FJARE. Who are these people that you are teaching?

Mr. BURKE. State committeemen.

Mr. FJARE. Labor, you mean?

Mr. BURKE. Yes. These are people who will register with the director at his summer institute, and if you are a safety commiteeman, let us say in John Blow Co., you register to come to my class and we have two sessions a day. That is morning and afternoon. We go into the State angle, and the accident prevention, and we go into the health problem. That is dust, gases and toxics, and various other things. I cover district conferences.

Just here a month ago now I came back from Salt Lake City and I was out at the university there. I was out there on two subjects, selenium and tellurium; they are ores found in coppers. We find that they are toxic and dangerous to our miners. I have scanned every authority in this country to get as much information as I could, and I went out there and I had a 3-day meeting.

Then I went out to the mill and met with the company, and I made a tour of the plant and we discussed their problem. Now, you asked me a specific question: What do I do now? I get a bill or a law and I convey that information to our people and tell them to compile as much as you can and do what you can to prevent these accidents. Here is your source of information. The Bureau of Mines says that according to their figures, let us take down in Alabama, they are finding dynamite in the muck.

Now, we have to do something about that.

Mr. FJARE. There is a good point for you to answer my question. You say you have to do something about it. Does the bill force management to do something about it?

Mr. BURKE. When we have that from you people we will tell the Bureau of Mines or the United States Bureau of Mines to do something about it or we will shut them down. We have got to save lives.

Mr. FJARE. I agree with you, and now we had the situation.

Mr. BURKE. If someone comes in to take that out of that muck and hits a stick, that is bang.

Mr. FJARE. That was pointed out from the testimony that ran down in Birmingham, and that was handed to all of the necessary people, and is this bill going to force that to be corrected?

Mr. BURKE. Well, George says he was not exactly happy with the bill; but, as you probably noticed all afternoon, I am a modest sort of a fellow, and I will take my time. You give me a start, and you open the door a little bit for me, and maybe we will come back with a little something more. Maybe you can go a little further and maybe give us what the coal miners got. That is what I would like to have. I have talked to Charley Ferguson about that time and again. He says that that is what I ought to have. The only difference in his mines and mine are that he has gas and I do not.

But I am running into some radon and I am running into radiation and some problems in our cobalt and uranium mines. I don't think Dr. Doyle can deny that, or Mr. Johnson can deny it. We are running into that. Here is this selenium and tellurium thing. That is a problem. There isn't anybody doing anything about it. We finally put the heat under the State of Utah and they passed a sort of a modest kind of code for the mine operators and what they should do.

However, you open the door on getting us the information, as these bills here mention, and I agree I am not the happiest man in the world, but, by God, it is a start. Maybe someday you gentlemen will see fit to give us what the coal miners got.

You see, gentlemen, when we have them, we don't have them like Centralia. Those are gas explosions. They will kill hundreds of men. We don't have that kind. When they knock us off, it is 2 or 3 or 5 at the most. We don't have any gas, and we don't have the explosions that they have in the coal mines. But, like Ben Moreell said there, if I can save one, I think I have done a lot. We feel the same way. We don't want to have any. Should we wait to put a signal light at a school crossing until some kid gets killed and then put the signal light in?

If it is a dangerous intersection, should we put it in before they are killed? Didn't the States pass, almost uniformly, a school-bus law? That is out of my line. I have the bill, and I had it mimeographed and I sent it all over the country to our people and told them if you don't have it get it. Do something about it. It is a good bill.

Then we amended our law in Pennsylvania, and we made it so that traffic going either direction would have to stop. The way we had it, they only had to stop in back of the bus. Then we amended the law so that both directions of traffic would have to stop for a school bus. Should we have to wait for those things, gentlemen? That is, wait until a couple of kids get killed and then we pass a law? That is what we are trying to do here. We don't want these men killed. We are

only asking that something be given to us to help us to keep going.

Mr. METCALF. Does that conclude the questions?

Mr. Burke and Mr. George Elliott, I think that concludes the questions the committee has. We appreciate your appearance. You and your colleagues. Your statements have been helpful to the committee and you have presented some questions that are going to require some consideration. We appreciate very much having you here with us.

Thank you.

At this time, then, unless there is something else to come before the committee, the committee will be in recess until tomorrow morning at 10 o'clock.

The first witness will be Mr. Orville Larsen, vice president of the Mine, Mill, and Smelter Union.

The committee will be in recess.

(Thereupon, at 5 p. m., a recess was taken until 10 a. m. December 4, 1956.)

MINE SAFETY (METALLIC AND NONMETALLIC MINES)

TUESDAY, DECEMBER 4, 1956

UNITED STATES HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON MINE SAFETY OF THE
COMMITTEE ON EDUCATION AND LABOR,
Washington, D. C.

The subcommittee met at 10:20 a. m., pursuant to recess, in room 429, House Office Building, Hon. Lee Metcalf (chairman of the subcommittee) presiding.

Committee members present: Representatives Metcalf, Rhodes, Fjare, and Elliott.

Mr. METCALF. The subcommittee will be in order to resume the hearings on the various mine safety bills.

The first witness this morning is Mr. Orville Larson, vice president of the Mine, Mill, and Smelter Workers. Mr. Larson, we are glad to have you before the committee again.

STATEMENT OF ORVILLE LARSON, VICE PRESIDENT OF THE INTERNATIONAL UNION OF MINE, MILL, AND SMELTER WORKERS; AND BERNARD W. STERN, RESEARCH DIRECTOR OF THE INTERNATIONAL UNION

Mr. LARSON. I have a statement that I would like to make, Mr. Chairman.

Mr. METCALF. Will you proceed.

Mr. LARSON. My name is Orville Larson. I am vice president of the International Union of Mine, Mill, and Smelter Workers, which represents approximately 70,000 workers in the United States, plus an additional 30,000 in Canada—all but a small minority of whom work in various sections of the nonferrous metals industry. Our members in the United States are mainly employed in metal and mineral mines, mills, smelters, refineries, and brass mills.

I am accompanied here today by Bernard W. Stern, research director of our international union.

Our members will be following these hearings with great interest, and they have an obvious and vital concern in all that occurs here I can assure the members of this committee that your printed proceedings and final report will be on the "best seller" list of all of our locals and that thousands of our members will carefully read and discuss its contents.

On behalf of our membership, I want to express our appreciation for the concern in their welfare manifested by these and previous hearings of this committee. We hope that Congress, at its next session, will renew and extend the life of this committee so that it may

hold further hearings in the major mining and smelting areas of the country. Such area hearings—with the opportunities they give for personal observation of actual conditions and for discussions with workers in the industry—cannot but deepen your understanding of the many hazards faced by our members.

Ours is an extremely hazardous industry. It is also an absolutely essential industry in the economic life of our country. There is an obvious and yet a frequently overlooked relationship between these two facts—for unless some action is taken to sharply reduce the hazards, our ability to recruit the necessary manpower to produce essential metals will be severely limited.

This is a fact that needs emphasis. In World War I, in World War II, and in every period of economic boom, large numbers of miners—when given an opportunity at other employment—will leave the mines. It took a forced draft of miners, in the last war, to maintain minimum work crews. Even today, in many areas, there is a shortage of skilled miners. Unless conditions in our mines are improved, we will be accumulating a deficit of trained manpower that could seriously jeopardize our ability to produce necessary metals.

These hearings, then, are, in essence, concerned not merely with the health and welfare of individual workers; they are even more concerned with the future of an essential industry. The erosion of a skilled work force caused by unsafe conditions, and the unwillingness of new workers in the face of such conditions to enter the industry, can be much more devastating in its ultimate effects than any industrywide strike or national catastrophe. Either of these latter contingencies would immediately command public attention and would produce demands for drastic action. What we are here concerned with is of more far-reaching significance. That is why we strongly urge upon the committee that it bring before Congress and recommend the program of legislation that promises a substantial alleviation of unsafe and disease-producing conditions.

All of the testimony that will be presented to this committee by my associates and myself, will be centered around two main themes. These themes, we can promise you, will recur again and again—in different forms, and buttressed by a variety of facts. In essence, they can be reduced to this:

(1) Industrial diseases and accidents in this industry persist at an abnormally high rate, despite advances made in our knowledge of causes and in engineering methods of control, and contrary to the general trend of other industries.

(2) The inability or unwillingness, in many cases, of State agencies alone, to cope with the situation, requires Federal legislative action to meet the needs of the situation.

We can further expand on this first point by emphasizing that in many key areas of this industry there has been—in recent years—a definite upward trend in both the incidence of diseases and serious accidents. The lack of recent and reliable data makes it difficult to generalize about the industry as a whole. Probably few other advanced industrial countries have so glaring a lack of significant figures on occupational diseases and accidents as does the United States—a fact which, in itself, testifies to our general indifference to the subject.

We have pieced together, from many sources, all available data—of varying reliability and coverage. From such data—plus the perhaps more significant experience of our members—we find that in most areas and sections of this industry, with some few exceptions, there has been, over the past few years, an increase in industrial disabilities. Also, as will be further elaborated, we are having new outbreaks of old diseases that we had every reason for believing had been either mostly eliminated from the industry or largely controlled. And, in some places, we are discovering new and previously unrecognized occupational hazards—sometimes because of advancing medical knowledge, but more frequently because of new methods and processes.

The recent increase in accidents and diseases, we believe, is related to the changing character of the industry. Mechanization, with its health and safety risks that are not being adequately met by old methods. In underground mining, for example, we now have greater use of block-caving, faster drilling machines, automatic conveyor belts, and much faster handling of ore and materials.

All of this means more ore and production—and also more dust and more and more and greater hazards, as machines and instruments take over control tasks previously performed by men. In smelters, we also have similar devices that create greater dust, fumes, and risks. Companies have perfected many new production processes; they have yet to perfect the necessary adequate safety devices and measures.

The most serious hazard still facing workers in hard-rock mining and milling is silicosis. The persistence of this industry menace—nearly 2,000 years after it was first recognized as an occupational disease—would alone justify the passage of the Kelley-Blatnik-Metcalf-McConnell-O'Hara bills—all of which are essentially alike—providing for Federal inspection of noncoal mines. A basic purpose of these bills would be to secure information relating to the causes of occupational diseases, which, among other things, would be transmitted to Congress for its consideration in connection with legislative matters.

The mere gathering of information by objective investigators on dust conditions should, in itself, bring about a greater observance of recognized standards, in addition to providing a more realistic basis for proposed legislative action. These bills would also provide for the drafting of a code of safety and health standards by an advisory committee. Such a code would necessarily have to include nationwide standards for dust control.

Severe accidents are still very common in nonferrous metal mining, as will be amply demonstrated in later testimony. All the accidents that have occurred, it is agreed by several experts, have not caused as great a loss of life or physical disablement as has silicosis.

Others who have either appeared before this committee, or can be called by the committee, are better qualified than I to discuss the medical aspects of silicosis—the slow process of disintegration of the lung, the effects upon the heart and other vital organs of the body, the gradual increase of disability, and the inevitable and irreversible progress of the disease. I can only describe silicosis as I have seen it and still see it in all the mining camps of the West, and it is not a very pretty sight.

I can best describe it as a kind of living death. Should there be any members of this committee who have not yet seen a silicotic in the final stages of the disease, I would strongly urge a visit to some hospital or sanatorium that accepts such patients—that you might better appreciate the depth of feeling that accompanies any discussion of his subject among miners.

The whole subject of silicosis has for years been smothered by official silence and by the spread of many delusions and myths. There is still a popular impression—shared by some public health officials—that silicosis is no longer a serious health problem. The last authoritative survey of silicosis in metal mining was completed by the United States Public Health Service in 1940. No State since then has maintained any figures that could accurately reflect the true incidence of silicosis. Some States have kept records of claims for compensation, but because of the many legal limitations on compensation, these figures only partly tell the story.

Even so, the absence of any real information has not deterred many so-called experts from issuing statements, of which there are many, to the effect that silicosis is no longer the problem that it once was.

Many of these delusions, we believe, can now be set at rest by an excellent study recently completed by the United States Public Health Service. A report of this study appears in a paper by Victoria M. Trasko of the Occupational Health Field Headquarters, United States Public Health Service—Some Facts on the Prevalence of Silicosis in the United States—in the October 1956 issue of the AMA Archives of Industrial Health.

I believe that was introduced before the committee yesterday by one of the public health men.

Mr. METCALF. Mr. Doyle and Dr. Flinn of the Public Health Service testified as a part of their testimony and this article was incorporated in the record.

Mr. LARSON. We have extra copies if the committee would want to have more of that report.

Mr. METCALF. Thank you.

Mr. LARSON. This committee will certainly want a copy of that paper as part of the record. If it has not already been offered for the record, we should like now to do so. (See p. 340.)

Basing her study mainly on records of workmen's compensation agencies, Miss Trasko found 10,362 cases of silicosis in a 5-year period, 1950–54, that have been compensated or reported in one form or another in 22 States. As she herself concludes, "This is a lot of silicosis for these times."

Without attempting to repeat Miss Trasko's findings in full, we would like to emphasize certain of her findings that appear to us to be of great significance:

(1) The 10,362 cases on which information was gathered "are obviously an understatement of the real situation." The basis for this conclusion is explained:

> In the first place, not all States or all potential sources of information within the 22 States participating were canvassed. Secondly, about three-fourths of the cases were obtained from compensation agencies, which because of numerous legal requirements seldom draw all the medically eligible. Since disability for work must usually be evident for compensation purposes, we can assume that the majority of these cases would be unemployed and disabled.
>
> The prevalence figure then does not reflect accurately the number of persons still at work who probably have some form of silicosis. This number may be

larger than we suspect. Many skilled workers, such as granite cutters and molders, though they know they have silicosis, often prefer to remain at their jobs rather than seek compensation or learn a new trade. Many industries, especially the mines, continue to employ workers with roentgenographic evidence of silicosis as long as they are not seriously disabled.

* * * Despite the paucity and limitations of the data, one cannot deny that 10,362 cases is a sizable number, even if spread out over a 5-year period. Since we have no previous prevalence figures to relate it to or even an adequate estimate of the population at risk to determine rates, we will have to be satisfied with the observation that this is a "lot of silicosis" for these times.

(2) The mining industry—including coal, metal, nonmetallic, and mixed, contributed the largest number of cases—a total of 6,755 cases, or 66.6 percent of all cases on which industry information was available.

In proportion to size of the work force, the non-coal-mining group had the largest relative number of silicotics. There were 1,822 silicotics from non-coal-mining industries, as compared with 4,079 from coal mining. Relating these figures to the number working in these different branches of mining—according to the last census of population—the 1,822 silicotics in non-coal-mining constituted 1.72 percent of the total work force, whereas the 4,079 coal miners made up 1.13 percent of that total work force.

(3) Silicosis is still developing, the study found, among "younger men with recent and short exposure to dust," although most of the cases appeared to be the result of exposure prior to 1935.

The study is one of the most significant contributions to clarification of the silicosis problem that has been made in many years. Considering the scarcity of material and the amount of work involved in piecing together the scattered fragments of information that could be secured, it represents a truly fine effort. This study should now, we believe, be supplemented by more intensive medical and environmental surveys in the major mining areas of the country.

We can confirm Miss Trasko's observations that these cases "are obviously an understatement of the real situation." Figures which we secured from the Arizona Industrial Commission in my home State are contained in our exhibit which I would like to offer at this time, Mr. Chairman. I will give you the exhibit at this time.

Mr. METCALF. Unless there is objection, this will be inserted as an exhibit in the record. This is the table of silicosis claims filed with the industrial commission.

(The table referred to follows:)

ARIZONA

Silicosis claims filed with Industrial Commission

	Total claims	Claims compensated		Claims not compensated	
		Total	Death cases	Total	Death cases
1950	22	12	2	10	4
1951	21	12	4	9	0
1952	14	9	3	5	3
1953	23	14	7	9	1
1954	17	12	6	5	0
Total, 5 years	97	59	22	38	8

Source: Data from Claims Department of Arizona Industrial Commission.

Mr. LARSON. This exhibit shows that in this same 5-year period covered by her study, 59 silicosis claims were compensated—the number reported for Arizona in her paper. In addition we found 38 claims which were not compensated because, although silicosis was present, the claimants failed to meet the 5-year exposure in Arizona requirement. Many more in Arizona—the exact number could not be secured—are disqualified because they are not considered "totally disabled," and it would be reasonable to assume that many other silicotics, because of these many restrictions and the difficulties encountered in securing compensation, do not even file claims. These facts underscore the fact that any study based on compensation records can at best be merely suggestive, and points up the need for a more comprehensive and more exact detailing of the true situation.

The unrealistic character of these numerous restrictions on payment of compensation for silicosis has been proven a thousand times, and yet they remain in nearly all State compensation laws. Their sole purpose appears to be to enable companies to escape their rightful obligations.

Let me cite a letter received in our national office just 6 weeks ago—one of many such letters received over the years. I do not believe the names themselves are too important. I have the letter here should any of the members of the committee care to examine it. It is from an attorney who tells of his client who worked in Utah mines from 1925 to 1939. Since 1941, he was employed at a Government shipyard in another State, from which he was recently retired because of disability. The disability, doctors advised him, was caused by a "lung condition" that he acquired in the mining industry. The attorney requests our advice as to what can be done for his client.

I have the letter here if any members of the committee care to see it.

The Utah compensation law—as is true of most laws—requires the injured worker to have been exposed to silica for not less than 5 years during the 10 years immediately preceding disablement. This man obviously acquired his silicosis in Utah, but because it took 17 years to progress to disablement, he is now completely barred from any compensation.

The known and long-recognized association between silicosis and tuberculosis offers another significant yardstick by which the silicosis hazard can be estimated. The fact that silicosis predisposes to tuberculosis has been long recognized by medical authorities. Twenty-two years ago, Dr. Gardner, then director of the Saranac Laboratory, estimated that tuberculosis is the cause of death among 75 percent of the silicotics who dies of respiratory diseases.

The current director of Saranac, in a paper recently read at this year's McIntyre conference in Toronto, states that tuberculosis, as an after effect of silicosis, "may be receding in importance, but lung cancer, emphysema, bronchial diseases, corpulmonale (pulmonary heart disease), and nontuberculous infections are gaining in importance." That observation has been confirmed by other experts in the field. Tuberculosis, as a cause of death in silicotics is no longer as common as it once was, but is still very common. Miss Trasko, for example, in her study, reports that "49 percent of the 983 persons who had died during the study period were found to have tuberculosis."

At this committee's hearing in Montana, some evidence was introduced showing the very much greater incidence of tuberculosis among

white males in the Silver Bow County, in which mining is concentrated, as compared with the rest of the State. This difference, it was reported was "statistically significant" and could only be explained on the basis of the relationship between silicosis and tuberculosis.

Since the Montana hearings, we have attempted to gather information on other States in which metal mining is an important industry. We have had only partial success in this. In some States the material could not be secured by us—Idaho, Oklahoma, Nevada. In some, it is now being prepared but has not yet been sent to us—Arizona, Colorado, and Utah. In at least one—Alabama—the basic data was secured but it was impossible to isolate the metal mining centers because of a heavily mixed industry pattern in the same country.

We were able, however, to gather some significant material for four States. In each of these States, the familiar pattern repeated itself—the incidence of tuberculosis in mining counties greatly exceeded that for the rest of the State. Mr. Stern will present the factual data on these States at the conclusion of my testimony.

Before concluding, I should like to say just a few words about the smelting and refining sections of our industry. In the Rocky Mountain area, in Montana, Arizona, Idaho, New Mexico, and in the Midwest, many of these operations are situated in the mining districts; many of them are also found in industrial centers, far removed from the mining areas.

At the Montana hearings, several of our members from smelters and refineries spoke at length about the specific industrial disease hazards connected with their work. Special mention was also made of the unusually high mortality from lung cancer in counties in which copper smelters and refineries were located, and there was introduced into the record a table from a study by Dr. W. C. Hueper of the National Cancer Institute, United States Public Health Service, showing death rates from lung cancer for specific Montana counties.

This same publication, A Quest into the Environmental Causes of Cancer of the Lung also cites numerous other authorities who have also found evidence of a high death rate from lung cancer among nonferrous metalworkers. At this time—rather than taking time to read all of these quotes, I would like to suggest to this committee that those portions of the study dealing with this subject be made part of the record. We can, if you wish, suggest the specific pages and excerpts.

Mr. ELLIOTT. I move that the whole be inserted.

Mr. METCALF. Unless there is objection, the whole matter will be inserted and Mr. Larson or Mr. Stern will provide the reporter with the exact quotations that he would like to have inserted.

Mr. LARSON. Thank you.

(The document referred to follows:)

LUNG CANCER—NONFERROUS SMELTERS, MINES

Table 17, which lists lung cancer death rates for seven industrial groups in Ohio, shows a striking difference between the rates for agricultural laborers and for employees in the nonferrous metal industry, with rates for transportation workers occupying a position directly behind the rates for nonferrous metal workers. It seems to be characteristic of inhabitants of agricultural areas to rank first in death rates from cutaneous cancer and last in rates for pulmonary cancer. This is in accordance with the relationship between solar radiation

and skin cancer and the relationship between low concentrations of carcinogenic air pollutants and lung cancer.

Nonferrous metalworkers, on the other hand, often have contact with dust, fumes, and vapors of some carcinogenic metals, such as chromium and nickel, or with arsenicals which are impurities in many nonferrous metals—copper, zinc, and silver.

TABLE 17.—*Lung cancer death rates per 1,000 deaths from all causes for 7 industrial groups in Ohio, 5,309 males, 1947 (Mancuso)*

Industry:	Death rate
Nonferrous metal	3.22
Transportation	2.91
Rubber and plastics	2.34
Iron and steel	2.18
Mining and quarrying	1.53
Agriculture	.82
Stone, clay, glass	.66
Total	

(Hueper, A Quest Into the Environmental Causes of Cancer of the Lung, Public Health Monograph No. 36, U. S. Government Printing Office, 1955, p. 15–16.)

The studies of Breslow, Hoaglin, Rasmussen, and Abrams on 518 histologically proved cases of lung cancer in California suggested the existence of an increased liability to lung cancer for members of the following occupational groups: Welders, sheet-metal workers, steamfitters, boilermakers, crane operators, and nonferrous metal smelter workers, that is, individuals who are exposed to metal dust and fumes; oilers, oilfield workers, wipers, and marine engineers, who are in contact with oil fumes, mists, and sprays; asbestos workers; construction and maintenance painters, who inhale vapors or various organic solvents, resins, lacquers, plastics, and rubber, as well as finely dispersed inorganic and organic pigments (chromium, nickel, copper, and arsenic compounds, carbon black, aniline dyes); and commercial cooks exposed to fumes and mists of overheated vegetable and animal fats and mineral pan greases (op. cit., p. 18).

The most recent addition to epidemiological investigations on arsenic cancer was made by Snegireff and Lomgard in studies of cancer deaths among employees of several metallurgical plants of unidentified type. Of the total of 109 deaths from all causes recorded during the last 25 years, 12 were due to cancer of all sites, and of these, 6 were located in the lungs. The investigators concluded from this evidence that "there are indications that biologically the human race made the adjustment to arsenic in the environment and that only rarely, when associated with other contributing endogenous factors such as systemic disease, or possibly factors such as radiation, it may be capable of upsetting the biological equilibrium"; and further "that the handling of arsenic trioxide in the industry studied does not produce a significant change in the cancer mortality of the plant employees; hence other factors in addition to arsenic must be considered significant in the causal relationship to cancer."

In view of the fact that 50 percent of all cancer deaths among employees of one plant surveyed were caused by cancer of the lung, the observations made in fact strongly suggest a carcinogenic action of inhaled arsenic trioxide upon the tissues of the lung of the exposed workers. This interpretation of the data of Snegireff and Lombard is supported by the high incidence of lung cancers among the population of several counties in Montana where copper smelters and mines were operated for many years, creating an occupational and environmental pollution of the atmosphere and soil with arsenicals. Prolonged inhalation of arsenical dust and fumes appears to produce an increased liability to cancer of the lung (table 23).

However, the existence of such connections should be acknowledged only when there existed at some time clinical and, if possible, histological and biochemical evidence of chronic arsenicism. In view of the absence of any such evidence associated with chronic arsenicism among the nickel refinery workers affected by cancers of the nasal cavity, paranasal sinuses, and lung, and among excessive tobacco smokers with cancer of the larynx and lung, it is most unlikely that exposure to arsenic dust, fumes, and vapors plays any role in the production of respiratory cancers in members of these population groups.

Additional cases of occupational cancer through contact with arsenical spray or fumes from smelters have been recorded in America (112,366), in Japan (245),

England (269, 104, 296, 55), and Germany (287, 146, 28). While none of these cases showed scrotal lesions, this fact scarcely represents a valid reason for denying such a localization, especially if the conditions of exposure and of personal hygiene should favor a cancerous development at that site.

Although Gross considered the incidence of industrial arsenic cancer as low (136), there is no doubt that arsenical occupational dermatoses and hyperkeratoses among various types of workers (loaders and packers of arsenicals, cotton field workers, vineyard workers, workers in arsenic plants) are not uncommon (335, 231, 172, 117, 53) (Hueper, Environmental and Occupational Cancer (Supplement 209, Public Health Reports, 1948), U. S. Federal Security Agency, Public Health Service, U. S. GPO 1949, p. 17).

Strong evidence recently was accumulated, according to Hunter (164), indicating that exposure to arsenicals may predispose to the development of cancer of the lung. In support to this claim, he revived the theory of arsenical origin of the lung cancers in the miners of Schneeberg and Joachimsthal. The occurrence of cancer of the lung in persons with cutaneous evidence of chronic arsenic poisoning in connection with industrial or medicinal exposure was reported for nine cases (36, 235, 147, 248, 287, 129). Similar claims have been made in regard to the causation of bladder cancer (op. cit., p. 17).

Mr. LARSON. We are similarly very much concerned over the recurrence of lead poisoning—in at least one operation that we know about. That will be fully discussed by our executive board member, Chase Powers, from Idaho.

We are also aware of a continuing high incidence of numerous other familiar industrial diseases—arsine poisoning; various types of illnesses caused by dust, fumes, chemical irritants and poisons; skin diseases, and the like. There would be little point in my burdening the record at this point with detailed accounts of the many instances that have come to our attention; nor, if I did, would these specific instances be sufficiently comprehensive to convey the general picture.

Our main point here is that some action is required, first, to determine the extent of such occurrences; and second, to assure that proper safeguards to prevent the occurrence are instituted. A lot of this can be done by State agencies, but there is also a significant area in which Federal assistance is called for.

Our next union witness, Secretary-Treasurer Albert Pezzati, will have some suggestions to offer on that, as well as other proposals for legislative action. Mr. Pezzati will also deal with other aspects of the health and safety picture in our industry.

My own testimony has been mainly concerned with silicosis, a major problem, but by no means the only problem that concerns workers in this industry.

In closing, Mr. Chairman, I want to thank the members of this committee for the courtesy extended in permitting me to testify at these hearings, and for the patience shown in listening to that testimony.

Mr. METCALF. Thank you, Mr. Larson. Now, before I ask the members of the subcommittee if there are any questions, do you want Mr. Stern to present some factual data?

Mr. LARSON. I think that would probably be proper.

Mr. METCALF. Mr. Stern, will you give us the data that Mr. Larson mentioned?

Mr. STERN. Mr. Chairman and members of the committee, we have several exhibits here dealing with that portion of Mr. Larson's testimony on the relationship between tuberculosis and silicosis. As Mr. Larson explained in his testimony, we attempted to secure information on this from all of the key mining States in which we have membership, and we were only partially successful in that endeavor.

The committee will recall that at the Montana hearings, there was some testimony by Dr. Ensign, of the Montana State Board of Health, dealing with this problem. I believe, however, that Dr. Ensign did not then introduce any specific figures other than the chart itself. Since then, we have secured from the Montana State Board of Health, Division of Disease Control, figures on the incidence of tuberculosis in Silver Bow County, which is the main mining county in Montana, as compared with the rest of the State.

I would like at this time to introduce that as our first exhibit on this.

Mr. ELLIOTT. Do figures in the exhibit which the witness offers now refer to Montana altogether.

Mr. STERN. Montana, alone, yes.

I might say, Mr. Chairman, that this entire exhibit is as it was given to us by the Montana State Board of Health, Division of Disease Control, and you will note that the incidence of tuberculosis in Silver Bow County was at a rate of 96.7 per 100,000 population, as compared with 26.9 for the rest of the State. Those figures are broken down between the active and the inactive cases.

Then, at the bottom of the page there is another table showing the number of cases reported in Montana in Silver Bow County, active and inactive, and the number of cases that might have been suspected if the experience in Silver Bow had been the same as for the State as a whole, and then the comment by the State board of health after subjecting this material to certain statistical tests that the difference between the incidence of reported tuberculosis for Silver Bow County and the rest of the State is so large that it could not have occurred due to chance.

Mr. METCALF. Will you explain that last column in your second table?

Mr. STERN. I was hoping you would not have asked that. That is a statistical test for testing the significance of relationship between two sets of figures. In essence, what it proves is that the large difference between the suspected cases and the actual cases is so large that they could not possibly be explained as solely due to chance without going into the mathematics of it; I think that is the gist of it.

Mr. METCALF. If there is no objection, this table will be made a part of the record.

(The document referred to follows:)

NEWLY REPORTED CASES OF TUBERCULOSIS IN WHITE MALES IN SILVER BOW COUNTY AND THE REMAINDER OF MONTANA: 1951–55

Rates for newly reported tuberculosis cases: Silver Bow County and remainder of State, 1951–55

Area	Rate per 100,000 estimated population		
	Total	Active	Inactive
Montana, total	32.9	21.8	11.1
Silver Bow	96.7	76.4	20.3
Rest of State	26.9	16.7	10.2

Since it is possible to state the probabilities that differences as large as those shown above could occur through errors of random sampling, we have carried

our analysis beyond that which you requested. Our findings are summarized in the discussion and tabulation which follows:

Silver Bow County

Type of newly reported case	Number of cases reported	"Expected" cases [1]	Chi-square (1 degree of freedom)
Total	262	89	366.8
Active	207	59	404.3
Inactive	55	30	22.8

[1] This is the number that would have occurred if the experience in Silver Bow had been the same as for the State as a whole.

The difference between the incidence of reported tuberculosis for Silver Bow County and the rest of the State is so large that it could not have occurred due to "chance." (Source: Montana State Board of Health, Division of Disease Control.)

Mr. METCALF. Are there any questions on this table at this time?

If not, we will proceed.

Mr. STERN. We have some excerpts from a study prepared by the Kansas Tuberculosis Association on the tuberculosis in Kansas. This is a very recent study. We have had photostatic copies made of certain pages from this that we would like to get into the record at this time.

Mr. ELLIOTT. Does Kansas have much mining?

Mr. STERN. In one county, it does. I would like very briefly to go over some of the high points of this study. On page 9, which is the first excerpt, from the third paragraph, it is stated:

Tuberculosis morbidity in Kansas is lower than in the United States as a whole. The newly reported tuberculosis case rate is about one-third that of the United States. Even though Kansas has a lower tuberculosis case rate than the United States, Cherokee County has a new case rate more than 1½ times as high as the United States rate and about 5 times as high as the average rate for Kansas.

Now, on page 14, there is a chart taken from this study showing Kansas TB case rate 5-year average, 1950–54, rate per 100,000 population. You have reproduced there a county map showing the rate in each of the counties. The members of the committee will note that the county in the extreme lower right-hand corner, Cherokee County, had a case rate of 119.4 which was as mentioned previously, 5 times the average rate for the State of Kansas as a whole.

Now, Cherokee County is part of the famous tristate mining area, together with Jasper County in Missouri, and Ottawa County in Oklahoma. These three counties make up the tristate district. In that area lead and zinc is the main form of mining.

On page 23 you have a similar chart showing the TB death rates in the various counties of Kansas, and you will note again that Cherokee County had a death rate of 57.7 per 100,000 as compared with a State average of 7.7 and a United States average of 16.2.

On page 98, there is a brief description of some of the special problems that this study uncovered with regard to Cherokee County. Without taking time to read that entire section I would like to just read some of the highlights.

Mr. METCALF. You may proceed, Mr. Stern.

Mr. STERN. In the first paragraph, this county with a population of 25,300 has been mostly a mining area for many years and only recently have agriculture and stockraising entered the picture. The health department has a part-time health officer, spending one-half day every 2 weeks in health department activities, 3 full-time public nurses, 1 sanitarian, and 1 clerk-secretary. The health department was originally organized in 1911 but due to financial problems it has not operated continuously since that time. It was last reactivated in 1939 following a survey of health and living conditions which was conducted because of the poor socioeconomic and public health situation in the county.

The survey placed great emphasis on tuberculosis, silicosis, intestinal parasites, housing, general sanitation, and exposure to dust. The county is still considered the hotbed of tuberculosis and silicosis in the State. Physicians interviewed in the county stated that the problem of silicosis and tuberculosis chiefly concerns persons in the older age groups.

Now, on page 99, after a report on the present case-finding activities, the fifth paragraph down, the recommendation of the study group was made that:

> In view of the high rates of abnormal X-ray findings in the Cherokee County surveys it would seem well to consider an annual countywide X-ray program with emphasis on community organization and health education to increase participation and effectiveness of the surveys.

I think that we can just leave the rest as it is except for the next to the last paragraph which is as follows:

> There were mixed reactions as to the value of the present case-finding program in view of a prevailing attitude in the area, of fear and hopelessness about the disease and the lack of easily accessible sanatorium facilities.

Then, on page 102, there is more information, and more figures about the silicosis and silicotuberculosis problem in Cherokee County.

On page 103, I would like particularly to call to the attention of the committee to the last paragraph there, which reads as follows:

> There can be very little question that the high tuberculosis morbidity and mortality rates are due to a high prevalence of silicosis in Cherokee County. It would be very important to know whether any new cases of silicosis are developing.

Then, on page 107, which is taken from that portion of the study dealing with the recommendations of the committee, it states as follows, in one of the recommendations, No. 11, to the effect that:

> That a survey be initiated through the State board of health to determine whether any new cases of silicosis are developing in Cherokee County. If so, steps should be taken to correct the condition.

Then, in appendix 4, it contains a table showing tuberculosis mortality death rate per 100,000 population, 1950–54, and the 5-year average rate for the various districts into which the State was divided, and the major counties within those districts.

That is all that we have to say on this.

Mr. METCALF. Unless there is objection, these excerpts from this study of tuberculosis in Kansas will be made a part of the record.

(The document referred to follows:)

TUBERCULOSIS IN KANSAS: A STUDY, 1955–56

A report by a staff assembled by a special committee composed of representatives of official and voluntary health and welfare agencies

III. FACTS ABOUT TUBERCULOSIS IN KANSAS

Kansas with an estimated population in 1955 of 2,075,900 has tuberculosis morbidity and mortality rates which rank among those of the lowest States in the United States (chart 1). Even though the tuberculosis problem in Kansas is not as great as that of some other States, tuberculosis is still a leading communicable disease problem in Kansas.

The population of Kansas is largely rural, but over 25 percent of the State's population lives in Sedgwick, Shawnee, and Wyandotte Counties which contain the three largest cities. Only 4 percent of the population is classified as nonwhite and a higher percentage of the nonwhite population lives in the 3 major cities, particularly Kansas City, than lives in the rural areas.

Tuberculosis morbidity in Kansas is lower than in the United States as a whole. The newly reported tuberculosis case rate is about one-third that of the United States. Even though Kansas has a lower tuberculosis case rate than the United States, Cherokee County has a new case rate more than 1½ times as high as the United States rate and about 5 times as high as the average rate for Kansas (chart 2).

In 1955 more than one-fourth of the new tuberculosis cases reported in Kansas were credited to tuberculosis X-ray casefinding activities. However, the method of tabulating this statistic credits new cases to X-ray casefinding even if the screening film were taken a year or more before the case was reported and the screening film may not have been the reason for the case being brought to diagnosis. It appears, therefore, that somewhat less than one-fourth of the new cases were actually found and brought to diagnosis as a direct result of an X-ray survey. More than 172,000 X-rays were taken for tuberculosis casefinding in Kansas in 1955, and more than 8 percent of the total population of Kansas was examined. For the United States it is estimated that about 30 percent of the new cases reported are found through X-ray casefinding. Over 10 percent of the United States population had survey chest X-rays in 1955. The number of new tuberculosis cases found per 1,000 X-rays taken in Kansas compares quite favorably with that of the United States; in 1955 Kansas found slightly less than 1 new case for every 1,000 X-rays taken. X-ray casefinding activities are frequently conducted either among population groups which are expected to yield the greatest return in new cases found per 1,000 persons screened or among groups which are expected to involve small financial cost per person screened, consequently the number of new cases found per 1,000 X-rays taken is not an absolute index of the prevalence of tuberculosis in the State.

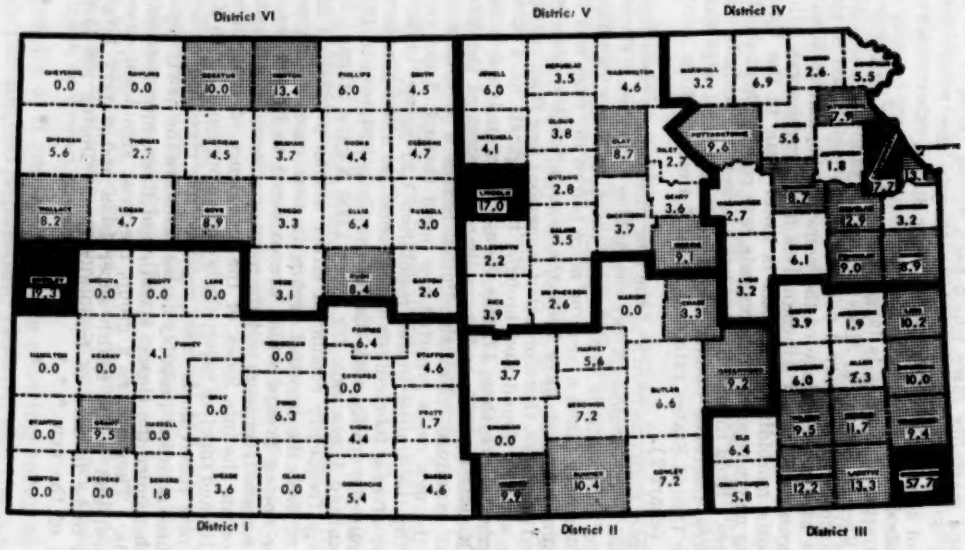
Both active and inactive tuberculosis cases are reportable in Kansas but almost all of the new tuberculosis cases reported are classified as active or probably active. These active or probably active cases are the newly reported tuberculosis cases which require the closest attention of those concerned with the control of tuberculosis. They are, as a group, the most significant cases; most of them need medical and public health supervision and a very large proportion are considered to be in need of hospitalization. During the last 4 years almost 60 percent of the new * * *

* * * * * * *

CHART 1

KANSAS TB DEATH RATES - 5 YEAR AVERAGE 1950-1954

Rate Per 100,000 Population



Source: National Office of Vital Statistics

Source: National Office of Vital Statistics

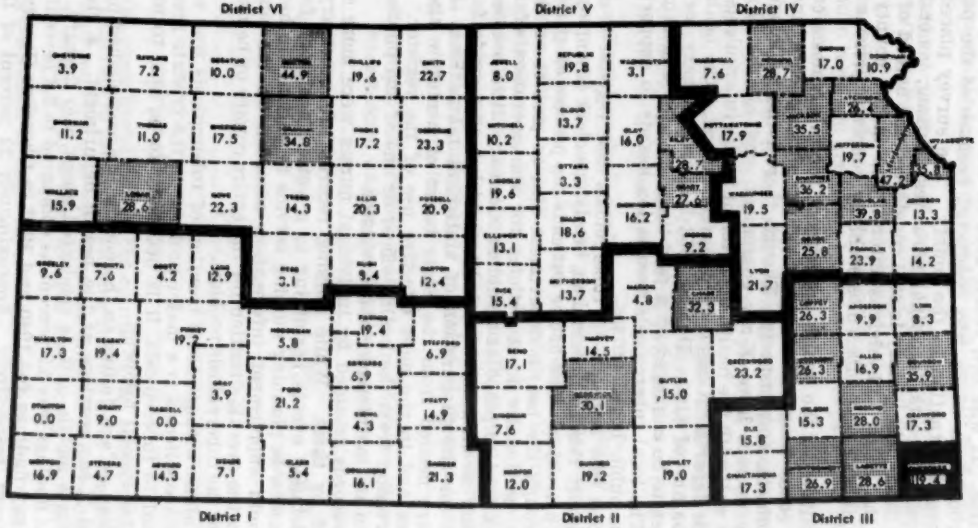
Between State Average and U.S. Average

Greater than U.S. Average (U.S. Average 16.2)

CHART 2

KANSAS TB CASE RATE – 5 YEAR AVERAGE 1950-1954

Rate Per 100,000 Population



LEGEND

Less than State Average (State Average 24.1)

Between State Average and U.S. Average

Greater than U.S. Average (U.S. Average 71.9)

Source: Kansas State Health Department

VIII. SPECIAL PROBLEMS—CHEROKEE COUNTY

Public-health services in Cherokee County

This county, with a population of 25,300, has been mostly a mining area for many years and only recently have agriculture and stockraising entered the picture. The health department has a part-time health officer, spending one-half day every 2 weeks in health-department activities, 3 full-time public nurses, 1 sanitarian and 1 clerk-secretary. The health department was originally organized in 1911 but due to financial problems it has not operated continuously since that time. It was last reactivated in 1939 following a survey of health and living conditions which was conducted because of the poor socioeconomic and public-health situation in the county. The survey placed great emphasis on tuberculosis, silicosts, intestinal parasites, houisng, general sanitation, and exposure to dust. The county is still considered the hotbed of tuberculosis and silicosis in the State. Physicians interviewed in the county stated that the problem of silicosis and tuberculosis chiefly concerns persons in the older age groups.

Responsibilities of the health department for tuberculosis control include reporting of cases diagnosed and providing nursing care and supervision to patients, contacts, and suspects. Though there is no radiologist in the county, most of the doctors have X-ray equipment, and all the physicians are said to cooperate well with the health department in the tuberculosis-control program.

The health department has a very meager budget. The health officer receives a monthly salary of $100. During 1953 it was necessary for 2 of the public-health nurses to be employed on a part-time basis for 4 months because of lack of funds. The local tuberculosis association assists in supporting the full-time service of the public-health nurses.

Tuberculosis case register.—A tuberculosis case register is maintained in the Cherokee County Health Department. Only one clerk is employed for all health-department activities. One of her duties is top process all pertinent information clearing through the health department and to post it on the register cards. There were no definite local policies for the operation of the register, nor were signals used to pinpoint significant items. Little use seemed to be made of the register as an administrative tool, either as a guide for the supervision of cases or for the preparation of statistical tabulations. Consultation and assistance are needed from the State board of health in the development of local policies and in the most effective use of the register. The clerk needs direct supervision from the health officer or one of the public-health nurses in the operation and maintenance of the register.

Nursing records retained by individual nurses were more complete and primarily used by them. While nursing records are necessary for a complete record of detailed events pertaining to a patient's history for the use of the individual nurse in planning nursing service to patients in her caseloads, these records should supplement information recorded on the register card; they cannot show the overall situation for the entire county or be used for review and evaluation of the tuberculosis problem.

Silicosis alone without some mention of tuberculosis was not carried on the register. Since silicosis is a major problem in the tristate area and predisposes an individual to tuberculosis, it is necessary to be able to identify this group separately for special followup.

Case finding.—Case finding in the county is accomplished primarily by X-ray surveys and X-ray services at the health department. A chest X-ray survey, using the State mobile unit, is conducted about ever 2 years. In 1954 the rate of abnormal findings was 5.9 percent as compared to 3.6 percent for Kansas. The rates of X-ray findings for 1949 and 1952 in Cherokee County were 4.2 percent and 4.5 percent, respectively. Approximately 21 percent of the total Cherokee County population participates in these surveys.

Following the 1954 survey, the local health department did not receive essential information on persons found in need of further study. Therefore, the nurses were unable to assist these patients in obtaining necessary followup.

In view of the high rates of abnormal X-ray findings in the Cherokee County surveys, it would seem well to consider an annual countywide X-ray program with emphasis on community organization and health education to increase participation and effectiveness of the surveys. Detailed plans should be made with the State board of health for the county health department to obtain essential information concerning all persons found in need of further service. Policies

should be developed with the medical society to provide for the adequate followup of all persons with suspicious X-ray findings.

In addition to the survey program, the health department has a 14 by 17 X-ray machine which was purchased about 3 years ago for case finding and followup work. Patients, contacts, and suspects are referred for X-ray by private physicians and public-health nurses. About 800 to 1,000 X-rays are taken each year. Films are developed by the public-health nurse at the unit, but are sent to Topeka for interpretation. Local physicians usually see the films before they are sent to the State board of health. After the films have been read by the State consultant the films and X-ray interpretations are returned to the health officer and a copy of the report is sent to the patients' private physician. Diagnosed cases of tuberculosis then should be reported to the local health unit and to the State board of health.

There were mixed reactions as to the value of the present case-finding program in view of a prevailing attitude in the area, of fear and hopelessness about the disease, and the lack of easily accessible sanatorium facilities.

There have been isolated tuberculin-testing programs in schools during the past 2 years. Tuberculin tests are also done by the health department at the request of the private physicians.

* * * * * * *

A total of $6,542 was spent in assistance grants to 71 tuberculosis patients in Cherokee County in October 1955. The average payment was $92.14, and payments ranged from $4.50 to $321.75.

In addition, it was learned that in fiscal year 1954–55 a total of $106,732.48 was paid by the welfare department for medical care for all indigent patients, including the tuberculous. In the same period $54,426.11 was paid for pharmaceuticals and $74,309.75 for hospital care.

The silicosis and solicotuberculosis problem in Cherokee County

Of the 620 cases in the nonhospitalized patient study there were 35 patients who had mention of silicosis in combination with tuberculosis. Among the 613 hospitalized patients studied, only 13 were recorded as having silicosis. Two were diagnosed as silicosis only but were not from Cherokee County. Table 28 shows the number of silicotuberculosis cases from Cherokee County in both the hospitalized and nonhospitalized portions of the study. Considering the studies individually or as a whole, approximately one-third of these patients have silicosis in combination with tuberculosis.

TABLE 28.—*Silicosis among tuberculosis patients in Cherokee County included hospitalized and nonhospitalized studies*

Study group	Total patients	Patients with silico-TB	Percent with silico-TB
Nonhospitalized	84	28	33.3
Hospitalized	14	5	35.7
Total	98	33	33.7

In addition to the cases found during the course of the study, 24 persons with silicosis alone were carried in the active nursing records as of December 13, 1955. Twenty other persons had silicosis with some mention of tuberculosis, but were not included in the study because they did not meet study criteria (table 29).

TABLE 29.—*Silicosis or silico-tuberculosis in Cherokee County*

	Silico-tuberculosis in study group	Other known silico-tuberculosis	Silicosis alone	Total
Nonhospitalized patients	28	20	24	72
Hospitalized patients	5			5
Total	33	20	24	77

This is undoubtedly a minimum of existing silicosis cases since a search was not made of the inactive health department records and, because silicosis is not a reportable disease, many cases probably are under the care of private physicians and unknown to the heath department. Since people also appear to move around a good deal within the tristate mining area it is difficult to determine the exact number of cases in the county at any one time.

Recognizing the problem of silicosis in Cherokee County and the fact that silicosis predisposes to tuberculosis, it would seem extremely important to urge local physicians to report these cases to the health department and for the local health department to maintain a register card, as a separate part of the tuberculosis register, for all known silicosis cases and suspects. This would make it possible, in the future, for a more accurate estimate to be made of the tuberculosis-silicosis problem in Cherokee, and for the health department to provide more adequate supervision of these patients.

There can be very little question that the high tuberculosis morbidity and mortality rates are due to a high prevalence of silicosis in Cherokee County. It would be very important to know whether any new cases of silicosis are developing.

* * * * * * *

10. That surveys by the mobile X-ray units be scheduled so that the area of high tuberculosis prevalence, and high prevalence groups, may be X-rayed at more frequent intervals than low prevalence areas and groups, and advance preparations made which will insure the best possible results.

11. That a survey be initiated through the State board of health to determine whether any new cases of silicosis are developing in Cherokee County. If so, steps should be taken to correct the condition.

12. That adequate medical social services and rehabilitation programs be developed in all tuberculosis facilities. A medical social consultant should be employed in a centralized State tuberculosis control division to provide assistance toward this end, to effect needed coordination of services by medical and social agencies.

13. That in the more effective organization and administration of the tuberculosis control program the Kansas Tuberculosis and Health Associaton, along with the other agencies, utilize to the fullest extent the values of health education.

* * * * * * *

Appendix 4

Tuberculosis mortality (deaths) rate per 100,000 population—1950–54 and 5-year average rate

Area	1950		1951		1952		1953		1954		5-year average rate per 100,000
	TB deaths	Rate per 100,000	TB deaths	Rate per 100,000	TB deaths	Rate per 100,000	TB deaths	Rate per 100,000	TB deaths	Rate per 100,000	
District I	4	2.6	2	1.3	8	5.0	4	2.4	7	4.1	3.1
District II	35	7.9	41	9.1	46	10.0	16	3.2	18	3.5	6.6
Sedgwick County (all)	18	8.1	27	12.1	24	10.2	8	2.9	12	4.2	7.2
Wichita (city)	16	9.5	26	15.4	22	12.6	8	3.9	10	5.0	9.0
Rest of county	2	3.7	1	1.8	2	3.3	----	----	2	2.3	2.1
Rest of District II	17	7.6	14	6.2	22	9.8	8	3.5	6	2.6	5.9
District III	50	18.9	49	18.2	36	13.6	24	9.0	33	12.0	14.3
Cherokee County	23	91.6	19	74.5	11	44.0	9	36.0	14	52.8	57.7
Rest of District III	27	11.3	30	12.3	25	10.4	15	6.2	19	7.7	9.6
District IV	78	12.8	62	10.1	52	8.4	43	6.7	46	6.9	8.9
Shawnee County	9	8.5	11	10.4	11	10.3	7	6.3	12	10.0	8.7
Topeka (city)	8	10.2	10	12.7	11	11.9	7	7.5	10	10.5	10.5
Rest of county	1	3.8	1	3.7	----	----	----	----	2	8.1	3.6
Wyandotte County	30	18.1	23	13.8	21	12.4	22	12.6	22	12.5	13.1
Kansas City (Kans.)	28	21.6	22	16.7	20	15.0	21	15.8	20	15.4	16.9
Rest of county	2	5.6	1	2.8	1	2.8	1	2.4	2	4.3	3.6
Rest of District IV	39	11.5	28	8.2	20	5.8	14	3.9	12	3.2	6.4
District V	15	6.0	13	5.1	12	4.7	3	1.1	10	3.8	4.1
District VI	8	4.5	15	8.3	7	3.9	7	3.8	5	2.7	4.6
Kansas (State)	190	10.0	182	9.5	161	8.3	97	4.8	119	5.7	7.7
Continental United States	33,959	22.5	30,863	20.3	24,621	15.9	19,544	12.4	16,392	10.2	16.2

Source: National Office of Vital Statistics.

Mr. ELLIOTT. When the chairman referred to excerpts, he meant the paper which we hold in our hands, all of it?

Mr. METCALF. Yes; and I understand this is various excerpts from this particular study, tuberculosis in Kansas, and study reports.

Mr. STERN. Yes.

Mr. RHODES. Mr. Stern, one of the factors which I noticed in going through this was on table 28, page 102. "Cherokee County would still have had a pretty good-sized tuberculosis rate even without the silico-tuberculosis." I don't know what the reason for that is. Perhaps it is because of the presence of silicosis, more people have been exposed to tuberculosis in the other industries and the other occupations in the county, it being an infestious disease and, therefore, more people contracted it.

That is one possible explanation. I am wondering if you have any other explanations?

Mr. STERN. I am not sure, Mr. Rhodes, just which figure or sentence you are referring to.

Mr. RHODES. That is table 28, the first column has the total patients and the second is those with silico-tuberculosis, and percent of patients with silico-tuberculosis is 33⅓ in one category and 35.7 in another category. It is 33.7 of the total. That means that there is rather large numbers of patients who have tuberculosis but do not have silico-tuberculosis.

Mr. STERN. I think that is true, Mr. Rhodes.

Mr. RHODES. I just wondered if you knew of any other reason why that particular county would have such a high incidence of TB?

Mr. STERN. I would assume that wherever you had a large amount of silicosis, which in itself predisposes to TB, you are in effect setting up a chain reaction that will spread throughout other elements of the population.

Mr. RHODES. I also noticed that in Osage County, where I know they do some coal mining, the rate seems to be more than some of the counties around it, but it is not as high as it is in Shawnee County, where they may have some mining but not a lot. There again, in Leavenworth County where they do some coal mining, the rate goes up to 47.2.

Mr. ELLIOTT. Is Leavenworth a coal-mining county?

Mr. RHODES. There is some coal mining there. You might be able to deduce from that situation that the particular type of mining that they do in Cherokee County is even more dangerous as far as silicosis is concerned than the coal mining.

Mr. STERN. I do not think that there is any question about that, Mr. Rhodes. That is hard ore, lead and zinc ore and historically it has been one of the hotbeds of silicosis in the county, as well as in the State.

Mr. ELLIOTT. Well, did not the figures which the gentleman brought out a minute ago show that actually the incidence of silicosis in mining other than coal mining is higher percentagewise than it is in coal mining?

Mr. LARSON. That is correct, sir. I don't believe Congressman Rhodes was here at that time.

Mr. STERN. Now, on the other side of Cherokee County, there is Jasper County, in Missouri, and we ourselves have prepared some figures on the incidence of tuberculosis in Jasper County.

Mr. METCALF. Will you explain that table?

Mr. STERN. This table was prepared by us on the basis of information which we secured from the Division of Health of Missouri, Bureau of Communicable Diseases. The basic information showed average annual morbidity in each of the counties of Missouri for the 5-year period, 1950–54. We computed from that the figure for the rest of the State other than Jasper County, and of course the material contained the figure for Jasper County.

Relating that to the population given for the various counties we came up with a figure of an average annual rate of 116.8 for Jasper County, compared with 59.1 for the rest of the State.

In other words, the tuberculosis morbidity rate for Jasper County is nearly twice that of the rest of the State.

Mr. RHODES. The rate in Jasper County is almost the same as the rate in Cherokee County, Kans.

Mr. STERN. That is right.

(The table referred to follows:)

MISSOURI

Tuberculosis morbidity (newly reported cases) rates, 1950–54

	Average annual morbidity	Average annual rate per 100,000 population
Jasper County	92.6	116.8
Rest of State	2,318.4	59.1
State total	2,411.0	60.2

NOTE.—The tuberculosis morbidity rate for Jasper County is nearly twice that of the rest of the State. Jasper County is 1 of the 3 counties (others are Cherokee County, Kans., and Ottawa County, Okla.) that make up the famous tristate mining district, an important lead-zinc mining area.

Source: Computed from basic data supplied by the Division of Health of Missouri, Bureau of Communicable Diseases.

Mr. STERN. Now, we have one more table on this, on New Mexico.

Mr. METCALF. What is the national average rate per 100,000?

Mr. STERN. That is contained in this report on Kansas. For that period it is 71.9.

Mr. METCALF. Now we are getting out of the tristate area and into New Mexico?

Mr. STERN. Yes.

Mr. ELLIOTT. You do not have anything on the Oklahoma county involved?

Mr. STERN. No; I will explain that in a moment. I can explain it now. We wrote to Oklahoma, but did not get any response, whereas we did get some response from all of these other States.

In New Mexico, the mining county with which we were primarily concerned was Grant County. You have open-pit copper mining and several lead-zinc mines. Using the same approach here that we used in Missouri, we found that the average annual rate, the TB morbidity rate in Grant County, and that again should be per 100,000 population, was 763.9, as compared with 106.8 for the rest of the State.

In other words, the tuberculosis morbidity rate for Grant County is more than seven times that of the rest of the State.

(The table referred to follows:)

NEW MEXICO

Tuberculosis morbidity (newly reported cases) rates 1950–54

	Average annual morbidity	Average annual rate per 100,000 population
Grant County	169.2	763.9
Rest of State	759.6	106.8
State total	928.8	126.7

NOTE.—The tuberculosis morbidity rate for Grant County is more than 7 times that of the rest of the State. Grant County is the leading metal mining county in the State. It produces copper, lead, zinc, and significant amounts of gold, silver, manganese, and molybdenum.

Sources: Computedf rom basic data supplied by the New Mexico Tuberculosis Association.

Now, Mr. Chairman, that is all that we could prepare of this type of exhibit. As Mr. Larson explained, the Arizona Health Department is preparing some figures for us, although I think the picture in Arizona is going to be a little bit more complicated than this.

Mr. METCALF. I think that the subcommittee would like to have it for the record if it can be prepared in time. As soon as you can get it, will you submit it?

Mr. STERN. Yes. In Colorado we actually received the figures just before I left but I haven't had a chance to do anything with them.

Mr. METCALF. And you will supply those for the record?

Mr. STERN. Yes, sir.

Mr. METCALF. Unless there is objection, these will be inserted in the record at the time that they are received.

(Information referred to will be filed with the commitee and will be available for reference when furnished.)

Mr. ELLIOTT. Do you have anything on Alabama?

Mr. STERN. Yes; I do. We did not use it because I do not think that the material lends itself to this type of analysis particularly. The problem we had in Alabama, Mr. Elliott, is that the significant county is Jefferson County.

Mr. ELLIOTT. Jefferson is the significant county from the standpoint of red ore mining. For coal mining the significant county might be Jefferson or it might be Walker. The difference in the two counties is that in Jefferson County you have large amounts of red iron-ore mining and large amounts of coal mining. In Walker County, Alabama, you have large amounts of coal mining and no iron-ore mining.

Now, why would not an analysis of Walker County, for instance, throw some light on the correlation between silicosis and tuberculosis?

Mr. STERN. I will be glad to investigate that angle of it. I tried working with Jefferson County, and we do find that it has a much higher tuberculosis rate than the rest of the State. The rough figures show that on new cases it is almost twice in Jefferson County what it is for the rest of the State.

Mr. ELLIOTT. You are correct in that Jefferson County is the largest mining county in the State, both for coal and for iron ore. Your figures there show that the incidence of tuberculosis in Jefferson County is twice the rate of the rest of the State.

Mr. STERN. That is of new cases. I would like to explain just a few things about it. First of all, the figures we got from Alabama were from the Alabama Tuberculosis Association and not from the State agency. They were not quite as complete as some of the other material we got from these other States.

Second, there is a question as to whether you can attribute the higher TB rate solely to metal mining in Jefferson County, because you have a much more mixed industry pattern there. You have iron-ore mining and you have coal mining, and you have steel mills. In terms of statistical inference, you could not say, "This is solely due to metal mining," in the absence of more information which we did not have.

That is the only reason we did not supply some figures for Alabama.

Mr. ELLIOTT. In other words, you could not break down the metal-mining portion of it. But since the incidence of silicosis in metal mining and that type of mining is equal to or higher as Mr. Larson pointed out than it is in coal mining, it seems that for the purposes of this record and for what probative value it might have, you might do the counties of Jefferson and Walker, and see how we come out on those.

Mr. STERN. I will be glad to do that.

Mr. ELLIOTT. Thank you, very much.

Mr. METCALF. When it is received, that will be inserted in the record.

(Information referred to will be filed with the committee, and will be available for reference when furnished.)

Mr. RHODES. May I ask a question about this New Mexico table? Is Grant County the county that Silver City is in?

Mr. STERN. That is right.

Mr. METCALF. Does that complete your statement?

Mr. STERN. It completes the exhibits we have and completes Mr. Larson's testimony.

Mr. FJARE. I was wondering if you placed any particular significance on the fact that Grant County, N. Mex., has almost seven times the tuberculosis incidence that Jasper County, Mo., has. Are you acquainted with the type of mining in both of the counties, and do they compare?

Mr. STERN. Well, I do not know that I could attribute to the types of mining, particularly. All I can say is that it is a shocking figure. I am not sure I have the answer to it.

Mr. FJARE. You would not be free to say that there is a greater silicosis threat in Grant County than there would be in Jasper County?

Mr. STERN. No; I do not think so, I just do not know enough about it at this time to comment on it.

Mr. FJARE. The Indian population would contribute to it perhaps.

Mr. STERN. That might be a factor.

Mr. METCALF. Now, we still have Mr. Larson and Mr. Stern before us for general interrogation. Do you have any further questions of either of them?

Mr. ELLIOTT. No; except I would like to say that I appreciate the very fine and well-worked out information that you brought to the committee. I think that your testimony has been very helpful.

Mr. RHODES. I was wondering if you or Mr. Stern have any idea as to why the incidence of silicosis is so much lower in Arizona than it is in Montana?

Mr. LARSON. Well, I am not too sure that it is any lower in Arizona than it is in Montana. In Arizona, I am sure, there are large numbers of unreported cases of silicosis. On the other hand, in Montana, I think most of them go to the public welfare board.

If there is a difference, it could well be attributed to the difference in mining methods. But Montana is almost entirely an underground operation where silicosis is much easier to acquire than it is in a number of the large open-pit mines in Arizona. You know you only have 3 or 4 large mines, underground mines in Arizona now and the fault in the ore comes from the open pit. That may attribute to that.

Mr. RHODES. I imagine when you get your figures from the public health service in Arizona, you will find it rather interesting to compare incidence in some of the counties.

For instance, Pinal County, having the mining in Superior, may be somewhat higher than the incidence, say, in Pinal County or for Greenlee, where they have the large open-pit operation.

Mr. LARSON. That is right. I think that will be true, Congressman. You see, in the open-pit mines while we think there is dust there and while we think silicosis is developing in the open pits, it is still too early to determine that.

Mr. STERN. Mr. Rhodes, I think we can anticipate some of the problems we are going to run into in analyzing the TB information for Arizona.

You probably know that Arizona has had the highest tuberculosis rate in the country; and it is complicated by the fact that, (1) you have a very large Indian population; and (2) it is a health center, to which a lot of tuberculars come to die, or to rest, and for that reason you have this unusually high incidence, which makes it somewhat difficult to isolate the particular mining sections of the community from the rest of the community.

Mr. RHODES. Of course, if you could get the figures of the non-Indian population, it would help.

Mr. STERN. That is what we are trying to do. We hope to have some.

Mr. ELLIOTT. There is one other thing that I would like to talk to Mr. Stern about.

In Franklin County, Ala., there is iron-ore mining of the brown iron-ore type, mined in the open pit primarily, and you might get some figures from Franklin County, Ala., that would throw some light on the situation.

Also, in north Georgia, there is brown ore mining, and I don't know by what method, but there is a considerable amount of it in 1 or 2 of the counties of north Georgia. You might get some information there that would be helpful.

Now, with respect to Miss Trasko's study, in which she found 10,362 cases of silicosis developing in the 5-year period 1950 to 1954, in 22 States, I assume the reason her figures did not include the other 22 States is that she didn't get the figures; the figures were not available.

Is that correct, so far as you know?

Mr. STERN. I believe it was testified yesterday by Mr. Doyle that in some cases the figures were not available, and in others they did not

attempt to get them because they knew the State itself was not particularly significant from the point of view of silicosis.

Mr. Doyle is here, I think, and can correct me if I am wrong.

Mr. ELLIOTT. Is Mr. Doyle here?

Will you stand up, Mr. Doyle, and answer this question?

Would the figures, in your judgment, in the other 26 States not reported in Miss Trasko's study, have revealed very significant information upon the incidence or the onset of silicosis?

Mr. DOYLE. No, sir. We don't believe that the addition of those other 26 States would make any significant difference in the number of cases reported. Some of these States we knew did not have a problem, such as Mississippi, Florida, and a few of the other States. There were a few significant States here, such as Kansas, which were omitted from our study. We were not able to get the information as to Kansas.

I think the addition of Kansas, Nevada, and a few of the other States, where we know that there is a problem, wouldn't have made a significant difference in the number of cases that we uncovered.

Mr. ELLIOTT. In other words, you don't think the number of cases would have been twice the number, had you covered the other 26 States?

Mr. DOYLE. These 22 States which we reported are the significant mining States.

Mr. ELLIOTT. Thank you very much.

Mr. METCALF. Mr. Larson, I have only a couple of questions. This doesn't relate to the silicosis part of your testimony. Some of the tables and some of the figures that were introduced into the record yesterday indicated a downward trend in mining accidents, and I believe you mentioned that some of the greater use of block caving, faster drilling machines, conveyor belts, and so forth, created more hazards in mining.

But at the same time, might it not be that different mining methods would explain some of this downward trend in general mine accidents?

Mr. LARSON. I think that is the answer, Congressman. The trend in mining today, of course, is toward the open-pit method of mining. While it is hazardous, it is not as hazardous as the underground operation of mining. I think that there is some way of separating the accidents in the open pits from the accidents that occur underground, and rather than finding a decline, I think you would find an upward trend in the actual underground operations.

I think the variance in mining methods is the answer to your question.

Mr. METCALF. That brings up the second question I have.

You have suggested that the Congress renew the life of this committee, and that further hearings in the major mining and smelting areas of the country be held.

This committee has looked into open-pit operations, and, as an example of open-pit operations, has gone into the Minnesota iron area. And of course we have gone down into deeper hard-rock mining in Butte, Mont., and we have been into Colorado to look into that special mining situation out there at very high altitude.

What other areas, that would be representative of different types of mining, will you suggest that the committee go into?

Mr. STERN. Well, of course, I would like to see you go into my home State of Arizona, for instance, and examine both the underground methods, and the open-pit methods in Arizona. I don't know as the underground methods are particularly different in Arizona than they are in Butte, Mont., for instance, and there may be some differences in the mining methods in the Mesabi open iron range as compared to the Morenci pit in Arizona. I think it would be informative.

Mr. METCALF. What about Alabama?

Mr. STERN. In Alabama I think the open ore mines definitely would be helpful.

Mr. METCALF. As Mr. Elliott has been telling me.

Mr. STERN. Yes.

While I am not too familiar with iron mining methods, the methods in undergound operations are a little different from those in the average metal mine.

Mr. FJARE. I said I had no questions, but I wanted to clear up some, I think I gathered from your answering the chairman's question.

Mr. Larson, is it your purpose to have the committee believe that new modern methods of mining, particularly underground, with the new type of mining and new methods of machinery, is creating greater hazards, and bringing about an increased fatality rate in mining today?

Mr. LARSON. I think that is fair. I do not say this is designed that way. Do not misunderstand me. I am not saying that the mining companies are adopting new methods in order to create greater accident hazards.

Of course not. I am not saying that at all. But I am saying that the introduction of new methods underground, particularly the ones I have described, have even increased the hazards of working underground. Maybe that will explain it.

Mr. FJARE. In other words, it is more dangerous today in underground hard-rock mining than it was, say 20 years ago?

Mr. LARSON. I wouldn't say it was more dangerous.

Mr. FJARE. You have said that they have increased their hazards.

Mr. LARSON. The hazards are still there.

Mr. FJARE. You said it had been increased. That is what I wanted to clear up.

Mr. LARSON. It has been increased, because there is more mechanization underground, and of course, when you have more machinery and so forth, the hazards increase. They have to.

Mr. METCALF. I know that all the members of the subcommittee have gained a good deal of benefit and information from your testimony and that of Mr. Stern's. We thank you for coming to us with this very well prepared and very well documented testimony.

Mr. LARSON. Thank you.

Mr. METCALF. I think we still have time this morning to hear the next witness, Mr. Albert Pezzati, who is secretary-treasurer of the International Union of Mine, Mill, and Smelter Workers.

Do you have a prepared statement, Mr. Pezzati?

STATEMENT OF ALBERT PEZZATI, SECRETARY-TREASURER, INTERNATIONAL UNION OF MINE, MILL, AND SMELTER WORKERS; ACCOMPANIED BY BERNARD W. STERN, RESEARCH DIRECTOR

Mr. PEZZATI. Mr. Chairman and members of the committee, I appreciate the opportunity to add this testimony to that of my colleague, Mr. Larson.

I am Albert Pezzati, secretary-treasurer of the International Union of Mine, Mill, and Smelter Workers. I have been associated with this industry, except for a 4-year period in military service, ever since 1941. While my personal experience has been mainly in eastern brass mills and smelters, I have also familiarized myself with the problems of other basic sections of this industry, and for several years have been intimately associated with union activities in all of the key areas of our jurisdiction.

Mr. Larson's testimony has properly emphasized the problem of silicosis in this industry. The persistence of silicosis forms a major basis for our support of the bills now before this committee which propose regular Federal inspection of noncoal mines, similar to what has been in effect for coal mines for over 15 years.

The means for preventing or controlling the dust which causes silicosis have been known for many years, but as the facts presented by Mr. Larson demonstrate, they have not been employed to the degree necessary to curtail the menace.

One of the most important provisions of these bills, in our view, is the proposal to create an industry-labor committee of six members which, among other duties, would be responsible for promulgating a code of reasonable standards pertaining to safety and health conditions. This code would be used as a guide for making recommendations under this act and, presumably, would also serve as a yardstick by which Federal inspectors would evaluate dust and ventilation conditions in all mines.

Mr. METCALF. If you will pardon an interruption, it would be a yardstick for the State inspectors, too?

Mr. PEZZATI. It could, indeed.

That, in itself, would constitute a tremendous forward step, for the sad fact is that today, in virtually all States—and I think this goes to the question you just asked, Mr. Chairman—the only dust-control standards observed are those which the companies themselves choose to employ. Only a few States specify maximum permissible dust counts for mines, and these are not uniform; only one State—Arizona—so far as we know, employs a mine dust engineer, and in practically all other States, there is neither the equipment nor the necessary trained personnel to carry on such necessary investigations.

This could be changed by passage of a Federal Inspection Act. We would then have uniform, nationwide standards binding upon all operators. Further, we would have a body of qualified inspectors, chosen on a basis of merit, and trained and equipped to conduct the necessary dust investigations. That, in itself, would be a very significant bit of progress.

The duties of Federal mine inspectors—if this kind of bill is adopted—would not be confined solely to dust investigations. We also have a very serious accident problem, particularly in nonferrous metal mining.

Our accidents—like our silicosis—rarely command public attention. The sordid details are usually buried in isolated and scattered fragments of statistical data that, sometimes we think, are deliberately intended to discourage reading, let alone study, by all but those required to do so. The statistics, as I shall further explain, more often conceal and confuse rather than bring to light the significant trends.

One of our major gripes is that those who work in what has long been recognized as one of the most dangerous industries in the country are denied those significant facts which are necessary if an adequate corrective program is to be formulated. We're not assessing responsibility for this situation against the United States Bureau of Mines which, as the agency responsible for collecting assessment facts appears to be doing the best that it can, within the limits imposed by the funds appropriated by Congress.

Perhaps this situation is not contrary to the interests of the American Mining Congress which has been consistently opposed to Federal regulation of mine safety.

Proper diagnosis of a condition, it is axiomatic, must precede the treatment. We do not now have an adequate diagnosis of safety conditions in metal mines. An adequate diagnosis, in our view, is one that would enable us to isolate the most serious trouble spots, by type of mining, by States, if not by areas, and by causes. All agencies, employers, unions, and Government agencies could then concentrate their efforts on correcting the situation.

As of 1 week ago, when we started preparing our statements for these hearings, the latest data on metal-mine accidents that we could secure from the Bureau of Mines was that contained in the pamphlet Employment and Injuries in the Metal and Nonmetal Mines from the 1953 yearbook. The latest figures in this report are preliminary figures for 1953.

We can, today, secure more recent figures on mine accidents from such far removed and relatively smaller—and more backward, if I may say so—countries as the Union of South Africa, Ceylon, Burma, and Japan.

With regard to metal mining as a whole, and for each major metal, the Bureau's figures report, regarding accidents (1) the number of injuries, fatal and nonfatal, in each year; and (2) the frequency rates—accidents per million man-hours—on fatal and nonfatal accidents.

They tell us nothing about:

(1) The area or State records on accidents.

(2) Accident rates by mining methods; that is, whether open-pit or underground; a question to which Mr. Larson just addressed himself a few minutes ago.

(3) Major causes of recent accidents.

(4) Any measure of the severity of accidents, other than fatalities, or any other data that would reveal to anyone concerned with doing something about mine safety where the problems were. The overall figures are, of course, important; but sometimes an overall figure conceals other significant facts.

Lest our criticism seem picayune, let me point out that what we are asking for in the way of statistical information is precisely the kind of information we once got from the Bureau of Mines. There has been a serious deterioration in the accident information prepared by this agency.

I have with me here a copy of the Bureau's 1942 report, Metal and Nonmetal Mine Accidents in the United States. I suggest that members of this committee examine this report carefully and compare it with the most recent report for 1953 to see how much less information is now reported on accidents.

This earlier type of report—of which 1942 was the last—was complete, comprehensive, and revealing; they were probably the best in the world. There may have been just cause for discontinuing this kind of reporting during World War II, when manpower and paper restrictions required concentration on more urgent tasks. There is no valid justification for not having this same kind of information today.

If the committee would like, I would like to submit a copy of this report for the examination of the committee.

Mr. METCALF. It will be so received and made a part of the committee file.

Mr. STERN. I think they could easily be secured from the Bureau of Mines. That happens to be our only copy at the moment; but we did want the committee to compare the two, to see the difference.

Mr. METCALF. We will see that these copies are returned to you for your use as soon as the committee is through with them.

Mr. PEZZATI. The Bureau's reports on coal-mining accidents are far superior to what it issues on metal mining. The information on coal mining is current, comprehensive, and detailed. Unlike metal mining—where only annual canvasses are conducted—coal-mine accident reports are issued on a monthly as well as annual basis. These reports contain data on cause, agency, frequency of fatalities, nonfatal-injury experience, and other pertinent data.

The difference in the kinds of reports issued for coal and metal mining cannot be explained solely by the larger number of men employed in coal mining. The superior information on coal-mine accidents is a direct result of the Federal Coal Mine Safety Act, which requires this kind of current and complete information for its proper administration.

Among other duties, coal-mine inspectors work with operators in getting them to submit reports on injury and employment statistics in compliance with section 105, title I of the act.

Some of the important uses to which these data are put are explained in the Bureau's Information Circular 7732, Health and Safety Activities of the Bureau of Mines, Fiscal Year 1955:

> Special tabulations were prepared for the Federal inspectors showing the safety performance at individual coal mines, to improve the effectiveness of their inspections of mines. Data on coal-mine inspection provided information for planning and administering the Bureau's coal-mine inspection work (p. 14).

We can also get this same kind of essential information for metal mines if we also have a Mine Inspection Act. Information alone will not solve all of our problems, but information will provide the basis upon which reasonable and intelligent men can get together and work out solutions.

If I may depart from my text here, I would like to say that this is our sole motive in appearing before this committee; not to berate anybody, nor to claim credit for the introduction of bills, or for the establishment of this committee.

We think that the committee itself deserves credit for its own establishment and for undertaking this survey.

Mr. METCALF. I might comment, Mr. Pezzati, that the only reason the committee has asked you and the other witnesses to appear is to supply the information we need for our report to the members of the full committee, and our colleagues in Congress.

Mr. PEZZATI. Exactly; and that is the spirit in which we come before the committee, and in an attempt to find a basis, as I say, for reasonable and intelligent men to work out a solution to what we think is a grievous problem which has long since escaped the attention which it deserves.

Many competent observers have commented on the relative backwardness of the United States in matters of mine safety. One of the few authoritative studies on health and safety, History of Factory and Mine Hygiene, written by Dr. Ludwig Teleky and published in 1948, notes:

> In Europe, safety practices are officially prescribed. The governmental safety regulations are carefully drawn up and are enforced more strictly than those in the United States. The qualifications of the mine inspectors are much higher in Europe, and the inspectors are required to pass difficult examinations. The managers and his assistants must be well-trained mining engineers. In short, governmental supervision and influence are much greater in Europe than in the United States.
>
> * * * It is surely correct to assum that the lower accident rates in Europe are a direct consequence of the stronger governmental control. Intelligently written, detailed regulations, their enforcement and strong supervision by the government seems to be the most efficient factors in diminishing mine accidents (pp. 262–263).

The situation since this was written may have changed in coal mining. There has certainly been no appreciable change in metal mining.

Passage of a Mine Inspection Act for metal mining would bring about that minimum degree of governmental supervision and influence that is obviously required.

The hazardous nature of the industry we are talking about can best be shown by a page taken from the 1956 edition of Accident Facts, issued by the National Safety Council.

This is, as the committee is aware, a private organization which secures its information from some 9,300, or at least in 1955 that was the number, cooperating companies.

Their figures on the category, Mining, Other than Underground Coal," are based on reports from 358 reporting units.

Now, it was testified here yesterday that the National Safety Council does not present a true picture. And that may very well be so, because it is not a complete picture. But there is none better that we can find.

There is certainly none as complete, that we can find. So, until we can find a better one—and this of course is part of the purpose of our testimony before this committee—we do think that the figures presented by the National Safety Council in this chart are worth noting, and I am presenting this chart as my first exhibit for the benefit of the committee.

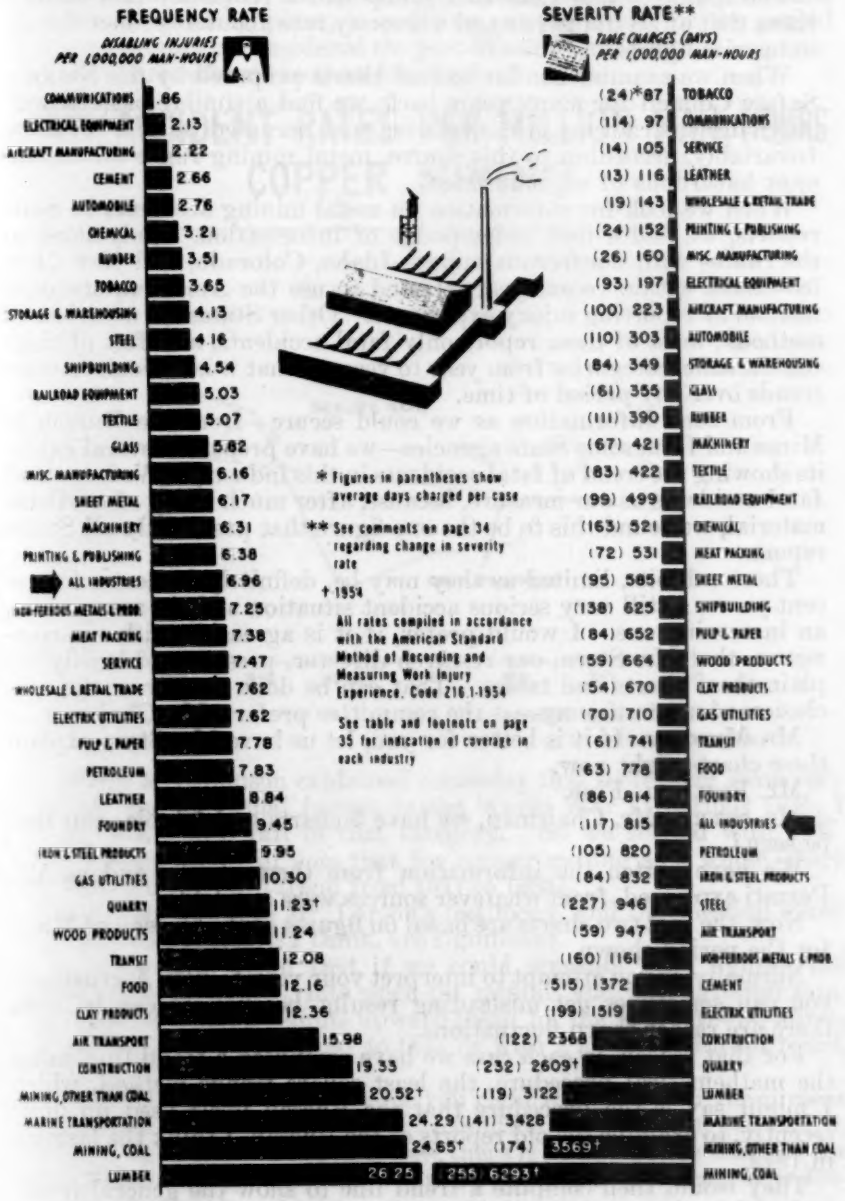
Mr. METCALF. Unless there is an objection, this chart which you have designated "Exhibit 1, Accident Facts, by the National Safety Council," will be made a part of the record at this point.

It is so ordered.

(The chart referred to follows:)

ACCIDENT FACTS, BY THE NATIONAL SAFETY COUNCIL (EXHIBIT 1)

1955 injury rates, reporters to National Safety Council



Mr. PEZZATI. The committee will note that mining, other than coal had the fourth highest frequency rate and the second highest severity rate of the 40 different industry categories for which figures are shown.

The mining, other than coal group had a frequency rate about 3 times that of all industries and a severity rate about 4⅓ times the all-industries figures.

When we examine similar annual charts prepared by the National Safety Council for many years back, we find a similar pattern with only slight variations in the relative spot occupied by this industry. Invariably, according to this source, metal mining ranks among the most hazardous of all industries.

When we look for information on metal mining accidents in State reports, we find a real hodge-podge of information. Only three of the States with nonferrous mines—Idaho, Colorado, and New Mexico—have within recent years started to use the American standard method of reporting injury experience. Other States use a variety of methods; most of them report only fatal accidents, and few of them use the same categories from year to year, so that it is difficult to trace trends over any period of time.

From such information as we could secure—from the Bureau of Mines and from some State agencies—we have prepared several exhibits showing the trend of fatal accidents in this industry. We have used fatal accidents as our measure, because, after much study of available material, we found this to be the one figure that practically all States report.

These exhibits, limited as they may be, definitely indicate, for recent years, a still very serious accident situation and, in many areas, an increasing one. I would prefer, if it is agreeable with the committee, that Mr. Stern, our research director, present and briefly explain these charts and tables. That can be done now or at the conclusion of my testimony—as the committee prefers, Mr. Chairman.

Mr. METCALF. If it is better for you, let us have Mr. Stern explain these charts right now.

Mr. PEZZATTI. Fine.

Mr. STERN. Mr. Chairman, we have 5 charts and 1 table; can that be seen?

We have gotten the information from these charts, and as Mr. Pezzati explained, from whatever sources were available.

Now, the first two charts are based on figures of the Bureau of Mines for the period shown.

Normally, if you attempt to interpret your year-to-year fluctuations, you can sometimes get misleading results, because, as can be seen, there are rather sharp fluctuations.

For that reason, in each case we have computed a trend line, using the mathematical procedure, the least square trends method, which I might say is the procedure that the Bureau itself used up until recently, to examine the old reports of the Bureau, I think the last one in 1942.

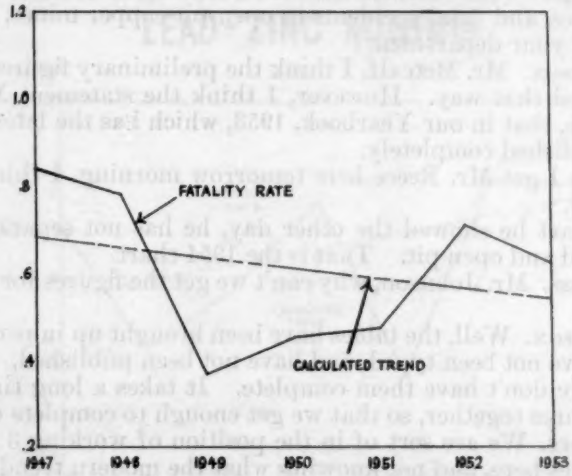
They would then compute a trend line to show the general trend, rather than the year-by-year fluctuations.

And, as Mr. Pezzati explained, we took the fatal-accident rates, because this appeared to be the most universal measure that we could find.

Now, the first chart shows fatal-accident rates per million man-hours for copper mining. And we started with 1947 through 1953. That was the last year for which information was available. We took 1947 as the starting point, in order to get the trend for the period that can roughly be considered the post-World War II period.

(The chart referred to is as follows:)

FATAL ACCIDENT RATES PER MILLION MAN-HOURS COPPER MINING



SOURCE: BASIC DATA FROM BUREAU OF MINES

I think Mr. Johnson explained yesterday that there were some very unusual and abnormal factors in the World War II period; 1946, I think, would also fall in that category. So we started with 1947.

The committee will note that for copper mining as a whole, there has been a downward trend from 1947 to 1953.

Now, here is where Mr. Larson's testimony, and the question asked by Chairman Metcalf, I think, are significant.

It is our firm belief that if we could separate these figures, the copper-mining figures, into open-pit mining and underground mining, we would find a definite upward trend for the underground mines, and possibly a trend similar to this, or with a more downward trend, for open-pit mining.

Mr. ELLIOTT. Let me interrupt you right there. Under the present method of statistics keeping, or accounting, or whatever you call it, engaged in by the Bureau of Mines, there is no separation made of the figures for underground and for open pit, insofar as the copper industry is concerned?

Mr. STERN. That is right.

Mr. ELLIOTT. Now, do you mean to tell me that the last figures available from the Bureau of Mines are for the year 1953? These are the closing weeks of 1956.

Mr. STERN. Up until last week, which was the last time we checked, that was true.

Mr. ELLIOTT. Well, that is all.

Mr. STERN. I might also say that we did ask the Bureau of Mines if they could separate these figures for us, and give us separate figures for underground, and separate figures for open pit. And we were told that this could not be done; that is, as far as we were concerned. Now, some of the figures submitted to the committee may have that breakdown, but we haven't seen that.

Mr. METCALF. Is Mr. Johnson here?

Can you give us the information as to the fatal accidents in underground mines, and fatal accidents in open-pit copper mines, or is that available in your department?

Mr. JOHNSON. Mr. Metcalf, I think the preliminary figures we have are separated that way. However, I think the statement Mr. Stern made is true, that in our Yearbook, 1953, which has the latest figures, it is not published completely.

But when I get Mr. Reece here tomorrow morning, I think he can explain that.

In the chart he showed the other day, he has not separated as to underground and open pit. That is the 1954 chart.

Mr. RHODES. Mr. Johnson, why can't we get the figures for 1954 and 1955?

Mr. JOHNSON. Well, the tables have been brought up in pencil form, and they have not been typed, and have not been published.

In 1955 we don't have them complete. It takes a long time to get all these figures together, so that we get enough to complete our table.

Mr. RHODES. We are sort of in the position of working 3 years behind ourselves here, and not knowing what the modern trend is.

Is there any way that that process could be speeded up?

Mr. JOHNSON. The latest we have is 1954. That is almost 2 years behind now.

Mr. RHODES. That is right.

Is there no way to work over those 1955 figures, and get us a trend line, at least?

Mr. JOHNSON. I don't know how far he has gone on those 1955 figures. I will find that out.

Mr. RHODES. Is he the only person who does this kind of work in your shop?

Mr. JOHNSON. Well, it is his branch. The figures come in from the field, and then are sent to our branch in Washington, and then the figures are compiled in this office.

Mr. ELLIOTT. Is the reason that these figures are so far behind that you have to beg for them, and it takes a long time to get them?

Mr. JOHNSON. For the smaller mines, that is partly true; but for the larger mines, at the end of the year it takes them a few months to get their forms complete and sent in.

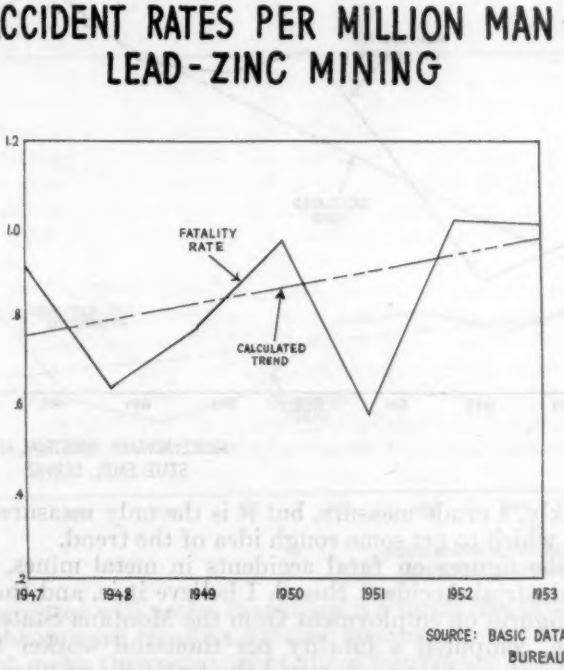
Then they will go through one of our field offices. Each district has a field office. They will collect these figures, which include published figures. They will take off some of them, and inform the Washington office, and take off the accident material.

The figures are used for two purposes, for tonnage, as well as for accidents.

Mr. METCALF. Thank you, Mr. Johnson. And we will have some further questions to ask you about the way you compiled your figures, and what information you can give, tomorrow, when you have Mr. Reece with you.

Mr. STERN. Our next chart, also based on figures obtained from the Bureau of Mines, covering the years 1947–53, pertains to lead-zinc mining. That is predominantly underground mining. There are few, but relatively few, open-pit mines.

(The chart referred to is as follows:)



An there it will be noted that there is a definite upward trend in the fatality rate from 1947 through 1953. And we believe, if we had the figures for underground copper mining, on the basis of what information we have, it would show a similar upward trend.

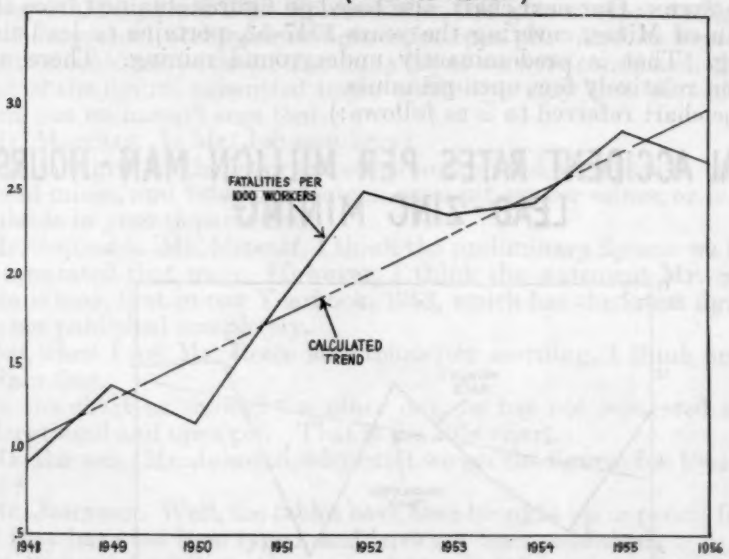
Now, that concludes all the information we used from the Bureau of Mines. Beyond that, we went into the various States.

And again, as Mr. Pezzati mentioned, we find a kind of hodgepodge. Because you rarely find the same figures, or the same categories of figures in two or more States.

This chart has already been introduced into the record at Butte; except that since then we calculated the trend. The chart shows fatalities per thousand workers, Montana metal mines, 1948–56 fiscal years.

(The chart referred to is as follows:)

FATALITIES PER 1000 WORKERS - MONTANA METAL MINES 1948-56 (FISCAL YEARS)



SOURCE: MONTANA INDUSTRIAL ACC. BD.
STATE EMPL. SERVICE

It is, frankly, a crude measure, but it is the only measure we could devise, from which to get some rough idea of the trend.

We took the figures on fatal accidents in metal mines, from the Montana Industrial Accident Board, I believe it is, and then related those to the figures on employment from the Montana State Employment Service, computed a fatality per thousand worker figure for each of the years, and then computed the trend shown there.

Mr. ELLIOTT. Tell us, for the record the number of fatalities per 1,000 workers that you found in the Montana metal mines in the year 1948.

Mr. STERN. Well, I can just read it roughly, there. It is roughly 1 per 1,000.

Mr. ELLIOTT. And in 1956, what is the figure?

Mr. STERN. It is roughly about 2.6 or 2.7.

Mr. METCALF. Of course, there is also a figure there from 1952.

Mr. STERN. Actually, a peak was reached in 1955, when it was about 2.8, I would estimate.

Mr. METCALF. And then in 1952, what is the figures?

Mr. STERN. About 2.5.

Mr. METCALF. The point is that this is not any 1 disaster in any 1 year. There is a rising scale in several years, on the chart.

Mr. STERN. There is a very marked, and very definite upward trend.

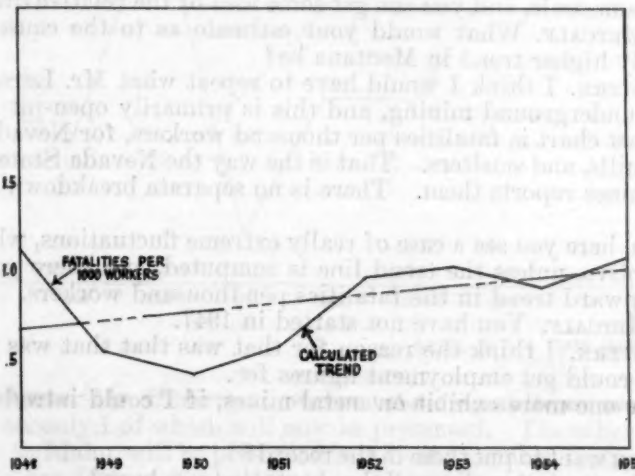
Mr. METCALF. While this chart is already in the record as a part of the testimony, I think it would be well to have it reproduced here, because it is an indication of the trend line.

And, unless there is objection, it will be inserted at this point in the record also.

Mr. STERN. Now on Arizona mining, we computed a similar trend line on fatalities per thousand workers for the period 1948 through 1955. This is again using figures on fatal accidents from the Industrial Commission of Arizona, and figures on average employment from the Arizona Employment Security Commission.

(The chart referred to follows:)

FATALITIES PER 1000 WORKERS - ARIZONA MINING



SOURCE: ARIZONA EMPLOYMENT SECURITY COMM.
INDUSTRIAL COMMISSION OF ARIZONA

The committee will notice that there is a much less pronounced, but still a slight upward trend in Arizona mining.

I should make this point: that these figures are not strictly comparable with what we had for Montana. Montana covered Montana metal mining. This is all mining, Arizona mining. There is some slight amount of coal mining.

I don't think it is too significant, but it is part of this picture.

So, actually, this covers all mining.

Mr. METCALF. None of the coal mining in Montana is included.

Mr. STERN. No; this is strictly metal mining. This is all Arizona mining.

Mr. ELLIOTT. These figures range from what, in 1948?

Mr. STERN. Roughly about 0.6 per 1,000.

Mr. ELLIOTT. To about what, in 1955?

Mr. STERN. A little over 1 per 1,000.

Mr. RHODES. I just noticed Mr. Larson shaking his head. I do not think we do have any coal mining in Arizona. So, why do we not just correct the record, to strike that part out? It is some other nonmetallic mining, but it is not coal.

Mr. LARSON. I do not know of any coal mines in Arizona.

Mr. RHODES. That was my impression, too, Mr. Larson.

Mr. STERN. Well, your employment security figures show recently an employment of around fifteen and a half thousand in all mining, and only about twelve or fifteen thousand in copper mining.

Mr. RHODES. Yes. There are some manganese mines, and other metallic mines.

Mr. STERN. I am glad Mr. Larson did correct the record.

Mr. METCALF. That Montana figure also would include all types, in addition to copper mining.

Mr. STERN. Yes. On that basis I think that some basis of comparison is possible; and if you relate this line, I guess they are both on the same scale, and you can get some idea of the relative difference.

Mr. METCALF. What would your estimate as to the cause of the relatively higher trend in Montana be?

Mr. STERN. I think I would have to repeat what Mr. Larson said. This is underground mining, and this is primarily open-pit mining.

The last chart is fatalities per thousand workers, for Nevada metal mines, mills, and smelters. That is the way the Nevada State inspector of mines reports them. There is no separate breakdown for just mines.

Again, here you see a case of really extreme fluctuations, which can be deceptive, unless the trend line is computed, and there you see a sharp upward trend in the fatalities per thousand workers.

Mr. METCALF. You have not started in 1947.

Mr. STERN. I think the reason for that was that that was the last year we could get employment figures for.

I have one more exhibit on metal mines, if I could introduce that now.

Did you want to put these in the record?

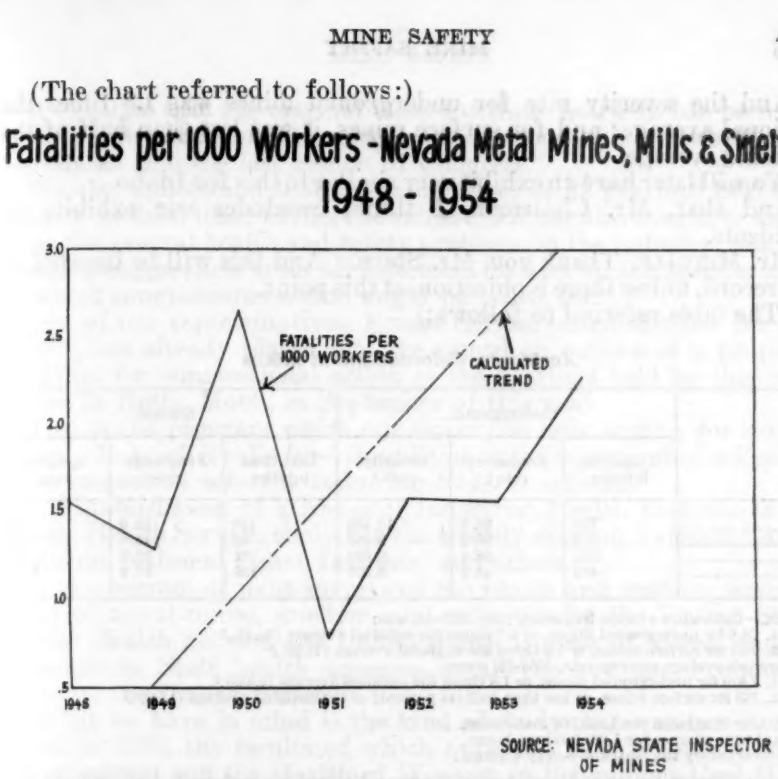
Mr. METCALF. Are those all the charts that you have?

Mr. STERN. These are all the charts.

Mr. METCALF. Without objection, these charts will be inserted in the record, in the order in which you have introduced them.

Give them to the clerk and, as I understand it, they will be reduced, and then returned to you if you want them.

(The chart referred to follows:)



Mr. STERN. Mr. Chairman, we have 2 more exhibits pertaining to accidents, only 1 of which will now be presented. The other one, pertaining to Idaho, will be presented by a board member from district 7.

These are figures for accidents in Colorado metal mines, secured from the Colorado Bureau of Mines' annual reports.

Mr. METCALF. Would you give us an explanation of this?

Mr. STERN. We reproduced these figures in their entirety, taken from the Colorado Bureau of Mines, because it happens to be one of the few State agencies that gives a bit more comprehensive coverage than most.

Here they report the number of lost-time injuries, the frequency rate, which is the number of injuries per 1 million man-hours, and the severity rate.

These reports are based on the American statistical standard method of reporting, which, I think, is the method recommended by the National Safety Council.

Now, if you examine both the frequency rate and the severity rate for Colorado metal mines, you will note that there has been a consistent downward trend in Colorado.

However, I think the future point should also be noted that even after that decline in both the frequency and the severity of accidents in Colorado metal mines, the frequency rate, the average frequency rate, for the 3-year period, 1953–55, for underground mines, was still 2.7 times the national average, and for surface mines, it was 1.3 times the national average.

And the severity rate for underground mines was 1.8 times the national average; and for surface mines, it was less than half of the national average.

We will later have an exhibit very similar to this for Idaho.

And that, Mr. Chairman, I think, concludes our exhibits on accidents.

Mr. METCALF. Thank you, Mr. Stern. And this will be inserted in the record, unless there is objection, at this point.

(The table referred to follows:)

Accidents, Colorado metal mines

	Underground			Surface		
	Lost-time injuries	Frequency rate [1]	Severity rate [2]	Lost-time injuries	Frequency rate	Severity rate
1952	753	98.0	13,350	125	51.0	740
1953	655	99.0	9,980	56	16.0	190
1954	555	88.4	9,600	71	12.6	119
1955	484	48.9	4,358	109	17.0	2,040

NOTE.—Colorado's average frequency rate, 1953–55, was:
1. 78.8 for underground mines, or 2.7 times the national average (29.45).[3]
2. 15.1 for surface mines, or 1.3 times the national average (11.23).[3]

Colorado's average severity rate, 1953–55, was:
1. 7,979 for underground mines, or 1.8 times the national average (4,339).[3]
2. 783 for surface mines, or less than half (44 percent) of the national average (1,760).[3]

[1] Number of injuries per 1,000,000 man-hours.
[2] Total time charges per 1,000,000 man-hours.
[3] As reported by the National Safety Council.

Sources: Colorado Bureau of Mines, Annual Reports. National Safety Council, Accident Facts, 1956 edition.

Mr. METCALF. I think this would be a good point for us to take a noon recess.

So the committee will be in recess until 2 o'clock, at which time Mr. Pezzati will continue with his testimony.

(Whereupon, at 12:07 p. m., a recess was taken until 2 p. m.)

AFTERNOON SESSION

Mr. METCALF. The subcommittee will be in order.

When the committee recessed, Mr. Pezzati was presenting his testimony.

You may continue with your testimony, Mr. Pezzati.

STATEMENT OF ALBERT PEZZATI, SECRETARY-TREASURER, INTERNATIONAL UNION OF MINE, MILL, AND SMELTER WORKERS; ACCOMPANIED BY BERNARD W. STERN, RESEARCH DIRECTOR—Resumed

Mr. PEZZATI. Thank you, Mr. Chairman.

I left off just where I had concluded speaking of the value of a Federal mine inspection act, and I would like now to approach some other problems that relate to the general question of mine safety.

An overall approach to health and safety problems in metal mining and related industries would, we believe, require more than just a Federal mine inspection act.

We realize that the original basis for these hearings has been the various bills proposing mine inspections in noncoal mines which were introduced into the last session of Congress.

We also understand that this committee, in its previous hearings, has not confined itself to this one subject, but has also sought to determine the general health and safety problems in the industry, and has solicited suggestions from all interested parties on the specific areas in which congressional action might be called for.

One of our representatives, Ernest Salvas, board member for district 1, has already placed into the record an outline of a proposed program for congressional action at the hearings held by this committee in Butte, Mont., in September of this year.

This is the program which our union has been urging for several years. In brief, it calls for—in addition to the enactment of a Federal mine inspection act—the following Federal actions:

1. Establishment of a National Industrial Health Institute in the Public Health Service, similar to the already existing National Cancer Institute, National Heart Institute, and others.

2. A program of joint surveys of the health and working environment of metal mines, smelters, and refineries by the United States Public Health Service, the United States Bureau of Mines, and the appropriate State health agencies in all the key metal-producing areas of the United States.

What we have in mind is the kind of study that was last done in Utah in 1939, the results of which appeared in a report, Working Environment and the Health of Workers in Bituminous Coal Mines, Nonferrous Metal Mines and Nonferrous Metal Smelters in Utah, 1940.

3. Federal promotion of improved State compensation laws, through passage of a bill such as H. R. 2622, introduced by the chairman of this subcommittee, Mr. Metcalf, in the 1st session of the 84th Congress.

This bill would provide, among other things, for Federal payments to States to enable them to make more adequate compensation payments for disability or death from silicosis. In return for these payments, the States would be required to meet minimum standards in their compensation laws and industrial hygiene services.

We know that probably any proposal for Federal regulation in health and safety matters will be immediately met with the familiar cry of States rights. We also know that many operators prefer to have us fight these issues out again and again in the separate State legislatures.

Well, we're not neglecting the State legislatures. We have been engaged in a continual campaign for years—in all those States in which we have members—for improved workmen's compensation laws, better mining codes, improved health services, and other like measures. This, though, isn't solving the problem. Even where we have made gains, the effect is frequently to give an unfair advantage to operators in other States, the laws of which are more lenient and do not require similar standards.

In the meantime, men are being maimed, and are dying of silicosis and accidents because of the lack of any nationwide standards that all operators should be required to observe.

We especially urge this committee to sponsor legislation for the establishment of a National Industrial Health Institute that would be responsible for the promotion, coordination, and support of continuous medical and engineering research in the field of industrial health.

The mining industry is only one of many that would benefit from such an institute.

The development of new processes, methods, and even industries using new materials and chemicals, calls for constant surveillance of potential health hazards and for adequate control methods. There is also a tremendous amount of research yet to be done on many of the old problems—including silicosis.

Let me suggest just a few of the many projects on silicosis alone that such an institute would undertake.

1. Aluminum dust treatment: For several years a controversy has raged among medical men, mining companies, and workers in the industry as to the effectiveness of aluminum dust as a prophylactic for silicosis.

A large number of companies in Canada and several in this country spray aluminum dust into the change rooms in which the men change their clothes, on the theory, first advanced by both the McIntyre Foundation in Canada and the Saranac Institute in this country, that the dust, by coating silica particles in the lung, will prevent the development of silicosis in men who have not yet contracted it, and will even retard its further development in many cases.

In fairness to advocates of the aluminum dust-theory, it should be stated that none of them claim the treatment is an adequate substitute for other measures of control—removal of dust, wet drilling, proper ventilation, et cetera. Proponents of aluminum dust have marshaled weighty sets of figures—particularly in Canada—to support their claim.

Without now attempting to review the extensive literature on this subject, we can summarize it by saying that, as of now, the weight of expert testimony is against acceptance of this method.

Among those who question the approach and definitely do not recommend this method of treatment are American Medical Association and the industrial pulmonary diseases committee of the Medical Research Council of Great Britain.

Similarly, a Conference of Experts on Pneumoconiosis, convened by the International Labor Office in Sydney, Australia, in early 1950, in their final report concluded:

> There was no conclusive evidence before the conference that the inhalation of aluminum in any form prevents the development of silicosis in man. There was no evidence before the conference that aluminum powder is of value when used for this purpose. There was some evidence that under certain conditions the inhalation of aluminum in industrial processes may be harmful and, further, there was experimental evidence that in animals the inhalation of aluminum dust agravates pulmonary tuberculosis (vol. I, p. 125).

Conceivably, the issue might be left unsolved without any great harm to anyone, except that the question has also been raised as to the possible harmful effects of the treatment.

The ILO, in the quote we have given, noted that the inhalation of aluminum in industrial processes may be harmful, and that, in animals, it did aggravate pulmonary tuberculosis.

The Medical Inspector of Factories for Great Britain, Dr. A. I. G. McLaughlin stated that, in his opinion, "there is strong evidence that at least some forms of aluminum can cause fibrosis of the lung" and, that "it might be well to sound a note of caution about the use of antidotal dusts" (from the Journal of the Royal Institute of Public Health and Hygiene, August 1955, p. 237).

The above is only a very brief summary of some of the main opposing contentions advanced in this debate. We're not suggesting that we attempt to resolve this issue here today. We do want to point up, though, some of the broad implications of the controversy and to underline the need for some definite answers to the questions raised.

If the aluminum-dust treatment has any positive value, its use should be encouraged under authoritative auspices. If, on the other hand, the method has harmful potentialities then either it should be definitely forbidden or else used only under controlled conditions that would safeguard workers.

These determinations should not be left to individual companies or private research groups sponsored by industry. These are questions to which a National Industrial Health Institute should be able to provide answers.

2. Dust concentrations and particle size: For many years, mining companies and official Government agencies have used the maximum dust concentration of 5 million particles per cubic foot—for ore of high silica content—as the permissible limit under which men might work without being harmed. This is the standard recommended by the authoritative American Conference of Governmental Industrial Hygienists.

Several recent articles have raised serious questions as to the adequacy of this standard. Cases have been found in which men working in much lower dust concentrations have still contracted silicosis.

Similarly, recent research in many countries has recognized that it is probably the very fine particles of silica that cause the worst damage to the lungs.

We have still to determine the lower limit of the size of particles causing silicosis. We have still to perfect dust-control instruments that can detect these very small particles. And there are still much more intensive investigations to be undertaken on the relation of particle size to the development of silicosis.

Here is obviously a wide area for further research.

3. Diagnostic tests: Experts have recognized for years that a diagnosis of silicosis must not rest solely on X-ray findings. The X-ray is obviously an important diagnostic instrument but, when used alone, can often be misleading. Other factors to be considered are occupational history, results of clinical examination, and, in more recent years, so-called functional disability tests. These latter are now recognized as being of possibly the greatest significance in detection of silicosis.

As yet, though, no simple functional tests have been devised that would enable most doctors to quickly determine the existence and degree of silicosis.

Some very valuable research on functional disability tests, we understand, has been undertaken by foundations and medical schools. This work, we believe, could be broadened and possibly hastened by a National Industrial Health Institute.

I could go on in this vein for some time, but I believe that these suggested projects indicate both the wide range and the significance of activities that an industrial health institute could undertake.

I would not want to imply that no research is now being done in any of these fields.

There are numerous valuable projects that we know of now being undertaken by the United States Public Health Service, private foundations, medical colleges, and other organizations.

Much of this, though, seems to lack any overall coordination, and some of it is not necessarily directed toward our most urgent problems.

The necessary coordination and direction could, we believe, be supplied by an authoritative, recognized National Industrial Health Institute.

There are those who tell us that mines always have been dangerous places in which to work and that, despite progress, they will never be very safe. There are even medical men who tell us that we'll never be able to get rid of silicosis in hard rock mines.

Such attitudes, we know, are too frequently used to justify do-nothing attitudes and, perhaps, to ease guilty consciences.

We refuse to acknowledge that our country—with the most advanced technology in the work, and with many spectacular successes already recorded in the conquest of disease—is incapable of making similar advances in mine safety and health. This committee, we believe, has been offered a rare opportunity to make real historic contributions to that effort. We urge you gentlemen to seize that opportunity and use it to the utmost.

I thank you for this opportunity to present this testimony.

Mr. METCALF. Thank you, Mr. Pezzati.

Do you have any questions, Mr. Rhodes?

Mr. RHODES. Mr. Pezzati, I am wondering about the techniques of taking silica dust out of the air. Now, as I recall, yesterday we had some testimony to the effect that you could get dust down to 1 micron out of the air.

I am wondering if you know whether it is possible for us to have better techniques of filtering air to get the smaller particles out?

Mr. PEZZATI. Since Mr. Stern has specially examined that question. I would like to have him answer that.

Mr. STERN. I don't know that I am an expert in the field, but I can just refer you to some literature on this subject.

There is an article in the recent issue of the AMA Archives of Industrial Health, October 1956, by a W. B. Harris, of New York, associated with the New York Operations Office of the United States Atomic Energy Commission, on the subject of recent observations on dust control in South African mines. Mr. Harris makes the point that the standard instrument for dust sampling in the South African gold mines is the konimeter. Then later in the article he points out that they have also devised two interesting and unique thermal precipitators, and he gives some description of them. He points out that in general their instruments are more accurate than the impinger used in this country; and he makes the point that also they read their samples in a dark field, as compared, I think, with a light field in most areas in this country.

He makes the point that whereas the impinger cuts at about one-half a micron, the thermal precipitator will readily sample particles

of 0.01 micron; whereas our counting procedure cuts off at about 0.8 of a micron, theirs probably is quite accurate down to about 0.2 micron. And then he concludes: On the basis of the experience which they have gathered, it would seem valuable to reexamine our American silicosis records, and our techniques for the evaluation of the potential hazard. We might find that we are not doing as careful a job as we would like.

I would like to supplement that by saying that I am not an engineer. Perhaps some of the engineers present would care to elaborate on it. But I cite this article merely as evidence that at least some experts in the field are questioning the methods we use in this country.

Mr. RHODES. Of course, I had in mind more the mechanics of taking particles out of the air. And perhaps it would be better to get the answer from some other witness.

Mr. METCALF. I might say that the members of the subcommittee who were in Butte saw some of the machinery devised by the Anaconda Co. engineers, which are highly efficient, and we were told and we believe that they have some of the best in the world.

Some of the inquiry we had was as to whether it could take the very fine and small particles that are not counted out. That was the reason I directed my inquiry of yesterday to Mr. Doyle about these very minute particles of less than 0.5 of a micron, because apparently in some counting procedures they are not even counted in determining the maximum allowable content. And yet they might have some effect upon the person's lungs.

Mr. STERN. I think possibly some of the technical people from the Bureau of Mines, or the Public Health Service, might clarify some of those points.

Mr. METCALF. Later on, when the Anaconda people testify, they can insert in the record some of their work on the elimination of dust, which is outstanding in the field.

Mr. PEZZATI. I might just add this: Our point is, of course, that a National Industrial Health Institute to correlate the independent researches that have been undertaken and coordinate this entire area of further research would be of the greatest value.

Mr. METCALF. Mr. Pezzati, this legislation—as you point out, and as I think the subcommittee has pointed out—is only a guide for the committee. This legislation was introduced in the last session.

Hearings are held on this as a sort of a framework, so that we can make recommendations, or other legislation can be introduced; but it provides for advisory committees, and one of the jobs that these advisory committees were given was to promulgate a code of standards and rules.

I think that you have demonstrated that we could not promulgate a code of standards and rules until we have determined, for instance, whether this aluminum therapy would be a proper device to use to cut down silicosis.

However, it seems to me that if we have an interchange of information and a clearinghouse of information, that is provided for by this legislation or other suggested legislation, we would at least have accomplished some of the things that you think could be done by a National Institute of Health, without going into the further step of authorizing or creating such an institute.

What do you think about that?

Mr. PEZZATI. Well, we would certainly welcome the first step, in and of itself. There is no question about that. We would welcome the passage of any of the legislation that we are talking about specifically here.

And the creation of a national advisory committee, we say specifically, would be to us a great advance, again in and of itself. I am not saying we would be wholly content only with that, but certainly as a first step it would be a very, very sizable one.

We throw into the hopper here the proposal for this National Industrial Health Institute only because we can foresee that it would be a further sizable step in the direction of solving this whole problem.

We would not be too unhappy if we did not get everything at once. We have no allusions about getting everything at once, either.

Mr. METCALF. Neither have the members of this subcommittee.

I can see that you and other witnesses have raised questions as to what the standards should be. And we not only need apparently a national advisory council, but we need greater research and, as was demonstrated yesterday, more appropriations for our existing agencies, to determine what some of these things are, for the guidance of the Congress, as well as for the guidance of the employees and managers who are concerned with this.

Mr. PEZZATI. That is right. We would need inspectors, first of all, to amass all the information necessary upon which to build the code of standards. Then we would probably need a referee, too.

Mr. METCALF. Of course, that is one of the jobs of this National Advisory Commission, to lay down the rules, and then probably the inspectors from the Bureau of Mines would have to be the referees.

Are there any more questions?

We thank you, Mr. Pezzati, and we thank you again, Mr. Stern, for your assistance. Thank you for a very informative and helpful presentation.

Mr. PEZZATI. Thank you.

Mr. METCALF. The next witness is Mr. Chase Powers, executive board member, District 7, International Union of Mine, Mill, and Smelter Workers.

Mr. Powers, I see that you, too, have a prepared statement. You are to be accompanied, as the other two witnesses were, by Mr. Stern.

STATEMENT OF CHASE POWERS, EXECUTIVE BOARD MEMBER, DISTRICT 7, INTERNATIONAL UNION OF MINE, MILL, AND SMELTER WORKERS; ACCOMPANIED BY BERNARD W. STERN, RESEARCH DIRECTOR

Mr. POWERS. I am Chase Powers, executive board member for District 7 of the International Union of Mine, Mill, and Smelter Workers—a district that includes the States of Idaho, Washington, Oregon, and California.

I have spent the better part of my life in the hard rock mining industry—as an underground miner in mines and tunnels, and as a union representative in one capacity or another for over 20 years.

During the past 14 years, I have served continuously as executive board member of my district—a position to which I have been elected in eight successive biennial referendums.

Today, I want to speak mainly about conditions in our industry in Idaho where we now represent over 4,000 workers engaged in the mining, milling, and smelting of lead, zinc, and silver ores.

The vast bulk of that membership is located in Shoshone County, the heart of the Coeur d'Alene mining district—a district that, for many years, has consistently been a leading producer of lead and zinc in the United States. Within that 25-by-15-mile mining area, our members work in numerous underground mines, in one of the largest lead smelters in the United States, and in an electrolytic zinc plant.

We also represent several hundred workers in some mines in the southern part of the State that produce cobalt, copper, and phosphate.

The Idaho mining industry provides a prime example of the need for Federal legislation to protect the health and safety of those whose toil produces the metals that are so essential to our economy. Idaho, by its long and sometimes stormy record as a leading producer of metals, would necessarily occupy a prominent chapter in any history of the United States mining industry. Idaho would also occupy an even more prominent chapter in any realistic history concerned with health and safety in the industry.

We don't deny that some progress has been made. There has, for example, been a steady decline in both the frequency and severity of accidents in Idaho metal mining for the past several years. After such steady progress, however, both the frequency and severity rates are still several times as high as those for the industry as a whole.

There are now—so far as we can tell—fewer silicosis cases than before, but there are still too many silicosis cases.

Lead poisoning, we are told, is a thing of the past in American industry. The experts tell us that lead poisoning is no longer a serious industrial menace, but in Idaho—despite the difficulties involved in securing accurate information—we know that in recent years, in the one lead smelter in the State, there has been a persistent and alarming increase in the known cases of lead poisoning.

So far this year, there have been nearly twice as many compensation claims for lead poisoning as in all of last year. The number of claims filed in the first 10 months of this year exceeds by nearly 40 percent the total of all such claims filed in the 8-year period from 1947 through 1954.

The persistence of such conditions and the recurrences of industrial diseases that have been mostly eliminated in other sections of the industry clearly demonstrate the need for more adequate inspection and enforcement of standards.

The State agencies alone, we believe, cannot do the job. We don't for a moment question the sincerity of those very few State agents responsible for the inspection of operations and enforcement of State standards.

The plain fact is that they have neither the staff, facilities, nor powers necessary for the job.

A Federal mine-inspection act for noncoal mines—such as that called for in the five similar bills presented in the last session of Congress—H. R. 9269, 9294, 9343, 11376, and 11997—would enable existing State agents to receive much-needed assistance from able and expert Federal inspectors.

Federal aid in this field need not and should not supplant existing State agencies, where they are attempting to do a conscientious job; such aid would merely supplement and extend existing mine inspection services.

It would also provide for additional services that most States—at least so far, have been either unwilling or unable to provide.

Idaho mines, except for a few open-pit phosphate operations—and probably a few small uranium mines—are practically all underground mines. In the Coeur d-Alene district, many mines are several thousand feet deep. And, Mr. Chairman, I am not alluding to the point that they are as deep as the mines testified about here yesterday. They are three to five thousand feet.

They are below sea level, and the high temperatures, poor ground conditions, and nature of the rock make for unusually hazardous conditions that call for greater than usual safety precautions.

At present, according to the annual reports of the State mine inspector, all mines and smelters in the State are visited about once each year by either the State inspector or his one deputy.

These same two inspectors are responsible for investigation of fatal accidents and will also make additional inspections when exceptionally hazardous conditions are brought to their attention.

At best, they can only record what has happened. They do make recommendations for improving conditions, which the companies may or may not adopt.

They have few real enforcement powers and, at least to our knowledge, have never attempted to publicize existing hazards as a means of securing compliance with their recommendations.

The accident records show that there has been some reduction in Idaho mining accident rates, but also that the situation is still very serious.

Since 1952, the Idaho mining inspector has used the American Standard Method of Recording and Measuring Work Injury Experience in computing accident figures.

The original figures from which the total are compiled are secured on a voluntary basis from cooperating companies.

The final annual figures for the period from 1952 through 1955—the latest available—were secured from the Idaho mining inspector's office and are shown—for mining operations in our exhibit.

Mr. METCALF. Will you explain this, Mr. Stern?

Mr. STERN. Yes.

The Idaho inspector of mines has been using this standard method of receiving reports on accidents and reporting them, from 1952 through 1955.

And this exhibit contains all the information that was made available to us by the Idaho inspector of mines.

Here again it will be noted that there has been a consistent decline, slight, but consistent, from 1952 through 1955, in the frequency rate, and some ups and downs in the severity rate.

Comparing these figures with the national average, we find that even after the drop in frequency rate, the rate for underground mines was still nearly 5 times the national average; and the rate for open pits was similarly about 5 times the national average.

I think it should be mentioned that open pits are a relatively minor part of Idaho operations.

The average severity rate for the 3-year period 1953 to 1955 was 2.8 times the national average for underground mines, and 1.8 times the national average for open-pit mines.

Mr. METCALF. Thank you, Mr. Stern.

Do you have any questions on the exhibit?

Then you will continue with your testimony, Mr. Powers.

Mr. POWERS. There has been, it will be noted, a consistent drop in the frequency rate of accidents—number of accidents per million man-hours—in underground mines over these years. The rate for open-pit mines, after rising sharply in 1953, dropped slightly in 1954, and showed a much bigger drop in 1955.

These figures still give no great cause for rejoicing. The frequency rate for underground and open-pit mines—for the last 3-year period—was still nearly 5 times the national average for the industry.

Similarly, the severity rates for both types of mining operations, as shown in our exhibit, greatly exceeded the national average. Although there were—as can be seen in our exhibit—many fewer underground accidents in 1955 than in 1952, they were obviously of a more serious nature. The total time lost, from all underground injuries, as shown in the severity rate for 1955, was higher than in any of the preceding years.

I don't think that we can ask the workers in this industry in Idaho to be satisfied with a few less deaths or a few less maimed and crippled lives when, as happened last year, 1 out of every 6 workers in the industry suffered some form of injury—with an average time loss per injury of over 105 days.

The picture on silicosis in Idaho is not much different, although, in attempting to draw that picture, we run into the fairly common and obvious difficulty—reliable figures on the present incidence of silicosis are just not available.

We know—from our own experience—there has been and still is a lot of silicosis in Idaho. Victoria Trasko, in her paper, Some Facts on the Prevalences of Silicosis in the United States, mentions 81 cases in Idaho during the 5-year period 1950–54.

These are cases that were compensated disabled and death cases by the industrial accident board.

As Miss Trasko herself recognizes, these are but a small portion of the total number of silocotics.

In Idaho, as in most Western States, it's the exceptional silicotic rather than the usual one who is able to get compensation.

A man must be totally disabled, have worked in mines for 5 years during the last 10—the last 2 of 5 must have been in the State—and file his claim within 1 year after disablement in order to receive compensation.

This automatically eliminates the migrant miner, of which there are many in and out of Idaho, the many who are partially disabled, those who fail to meet the rather stringent eligibility requirements, and the very many more who prefer to work so long as they can draw a breath, rather than attempt to subsist on the meager compensation allowances.

In a study of Shoshone County completed some 17 years ago—probably the only study ever made in the area—Drs. Ellis, Smith, Bonebrake, and Hunter examined 7,542 men, of whom 6,243 were exposed to silica dust, over a period of several years. The results

of that study were published in Northwest Medicine for December 1942.

The results were truly shocking—2,183 men, or 35 percent of those exposed, were diagnosed as silicotics. Of these, 1,811 were in the first stage; 311 in the second stage, and 61 were in the third stage.

Another 1,976 showed excessive linear exaggeration in their X-rays, but these markings had not progressed to the extent where they could be called silicosis. One hundred and sixty cases of tuberculosis were diagnosed, of which 145 had tuberculosis and silicosis.

If we eliminate the third stage silicotics—totally disabled—we're left with 2,122 men in earlier stages of silicosis, plus 1,976 suspects. All of the 2,122 early stage cases, we know, should eventually become totally disabled, as should a substantial number of the suspects. And yet, according to compensation records, only 81 cases showed up as compensation cases by 1950–54. What happened to the others?

We can, of course, only speculate. Many of them, it would be safe to assume, died. Many others probably left the mines and secured other jobs—these may have prolonged their expected life; it also eliminated them as possible claimants when, as they will, they become totally disabled. Others undoubtedly left the State before total disability set in.

Many of them are probably hanging on—perhaps on public relief rolls, perhaps dependent upon relatives, or maybe in tuberculosis sanitoria or veterans' hospitals—neither fully alive nor quite yet dead.

That's a pretty tragic picture to contemplate. Certainly this country, with its great wealth and material resources, should be able to do better by those who work in its mines.

My testimony thus far has dealt solely with conditions in the mines. We also have two smelters in the Coeur d'Alenes and I would like, briefly, to describe some of the health hazards there.

One of these is an electroyltic zinc smelter. I will be talking about the lead smelter.

Over the past 2 years, there has been an alarming increase in the number of persons who have been "leaded," or suffered from lead poisoning, as the result of working in the lead smelters. The situation became so serious that early this year our local asked the State mining inspector to look into the situation.

We are submitting a copy of the letter sent to the president of our local by the deputy inspector.

Mr. METCALF. Do you want to offer this letter for the record?

Mr. POWERS. I want to call your attention to the fourth paragraph, which I will quote.

Mr. METCALF. Why do you not read the fourth paragraph into the record?

Mr. POWERS. Yes.

He wrote:

> When I received a copy of the union's grievance early this month I made a complete check with the safety department of all their records pertaining to lead poisoning. While I am not permitted to divulge any specific figures, I can state that the grave situation which has developed in the past year is such that it will require the cooperation of all concerned if it is to be successfully combated.

Last month one of our representatives visited the industrial accident board in Boise, Idaho, and secured from them figures on the number of claims filed for lead poisoning from this one smelter.

These figures are shown in our exhibit. Thirty-three such claims have been filed so far this year, compared with 17 last year, and an average of about 3 per year for the previous 8 years.

The claims filed with the industrial accident board are obviously only part of the total number of those who suffered from some form of lead poisoning. They are probably the most severe cases and do not include many more who had either slight attacks or who received medical and possibly hospital care by other agencies.

An outbreak of lead poisoning, in the year 1956, raises many interesting questions bearing on the whole subject of industrial diseases. Lead poisoning is sometimes referred to as "the second oldest industrial disease known to men."

The causes, prevention, and treatment have been known to doctors for many years. Twenty years ago, public health officials could justifiably claim that the disease had been practically eliminated, and yet, today, we find a recurrence of an old plague.

How could this happen?

The answer, I believe, supports what Vice President Larson of our union has already told this committee—there has been a vast speedup of production in this smelter—as in many others—without any like increase in protective measures for the health of the men working there.

The tempo of production has greatly increased in this smelter—conveyor belts, automatic handling of materials, and greater mechanization have all speeded up the entire production process and increased the health risks. The same is also generally true of work in the mines.

I have attempted in this testimony to present a general picture of the situation in only one section of our industry. Very similar pictures, I am sure, could be drawn of other sections of the industry.

It is, I believe, a situation that confirms the need for Federal action along the lines of the program presented to this committee by our Secretary-Treasurer Pezzati.

On behalf of the miners and smeltermen in my district, I strongly support these proposals and urge this committee to take such action as is necessary to bring them to the attention of Congress for favorable action.

Mr. METCALF. Thank you, Mr. Powers.

Are there any questions?

Mr. RHODES. I would like to ask Mr. Stern a question.

What is the severity rate, Mr. Stern? We use it in these tables here, and I don't know how it is computed.

Mr. STERN. It is actually the time charged per million hours of exposure. What they do is that they assess the time according to a standard schedule.

I can get it for you.

Mr. RHODES. I do not care about having the exact formula.

Mr. STERN. So many days for death, so many days for loss of an arm, for loss of a leg, and so forth.

Mr. RHODES. It is based on the time lost from the job?

Mr. STERN. Time lost per million man-hours of work.

Mr. METCALF. I have no questions.

I want to thank you, Mr. Powers, for your testimony. It underscored and underlined an area with which I am familiar in the western

part of Montana, which is immediately adjacent to the Coeur d'Alene area. You have made a very important contribution to our record.

Mr. POWERS. Thank you.

Mr. METCALF. The next witness is Mr. Ernest Salvas, who is the international executive board member from District 1, International Union of Mine, Mill, and Smelter Workers, Butte, Mont.

Mr. Salvas has already testified before this committee.

We are glad to have you back again.

You do not have a prepared statement?

STATEMENT OF ERNEST SALVAS, INTERNATIONAL EXECUTIVE BOARD MEMBER, DISTRICT 1, INTERNATIONAL UNION OF MINE, MILL, AND SMELTER WORKERS, BUTTE, MONT.; ACCOMPANIED BY BERNARD W. STERN, RESEARCH DIRECTOR

Mr. SALVAS. No; I don't.

Mr. METCALF. You and Mr. Stern can proceed without such statement.

Mr. SALVAS. Mr. Chairman and members of the committee, I am the executive board member for the Mine, Mill, and Smelter Workers, and have been in that capacity for 3 years.

I actually have 16 years of working experience in the industry, in the mines and smelters and mills in Montana.

This of course I testified to at the Butte hearing, and I do not want to repeat here some of the points I made in the Butte hearing, in my previous testimony.

Mainly, I want to point out that our union in these series of hearings has attached real significance to the work of this committee, and the work of the Congress in focusing national attention on the problems in our industry.

I think that my previous testimony, and the testimony brought out here by my associates has brought out some shocking facts, and we hope the report of the committee will be such that it will take into consideration doing something about the situation.

I want to report to the committee here, the effects of the committee hearings on our members and the communities where they were held.

Particularly in Butte, Mont., the committee hearing there stimulated us and our members and gave a ray of hope to the workers in the industry and to their families, that the National Congress, in setting up this committee, and in holding these hearings, was going to alleviate the situation that they are so well aware of.

Also, of course, the facts brought out in the hearings, and the publicity on this work, are such that the general public in the communities—they, too, who are aware of the situation in the industry, are having some hope that the national attention on this will result in continued work by this committee in concrete legislation.

I believe that the whole labor-management relations on the question of safety and health are getting a shot in the arm, and some stimulus from this committee in the hearings being held.

Of course, the main object that we have in the hearings is the question of legislation, but not so much from the standpoint of compensating people who get injured, or have health problems, because

they are working in the industry, but we feel the question of prevention is the main point that we have to follow.

I think it was brought out in my previous testimony in Butte and testimony here by my associates, that there is a real burden on the workers in this industry, and that the principle of compensation, when we come to the point of compensation, has to be standardized and applied, so that the cost of production of the metals from our industry will have to bear more equally the share that the injuries are making.

The future of the committee is of deep concern to us. We realize that the time has been limited. We certainly desire additional field hearings, and additional hearings particularly in the key areas of the industry. Some of them were mentioned this morning—Arizona and Alabama.

But certainly the Coeur d'Alene district that Mr. Powers just testified about, the Utah-Nevada area, and others, merit the consideration of this committee, and field hearings, right on the ground.

We feel that the reappointment of this committee is of prime concern, and we certainly would like to see the committee report itself, by some means or other, bring about the continuation of the committee, so that this work that is started now can be continued and followed up

The prime thing is that for the first time we feel there is the focusing of attention on these very serious health and injury problems in an area that is vital to this country.

The establishing of this committee is focusing attention where it needs to be, and where it should be continued; so that appropriate legislation will result.

I think that all of us here who have testified in this hearing and in previous hearings, and will probably testify yet, have a common purpose in trying to find the answers and alleviate the serious hazards in the industry.

I want to thank the committee for this additional opportunity to appear here, and we will be prepared to answer any questions that you might have.

Mr. METCALF. Thank you, Mr. Salvas, for that fine additional statement.

Do you have any questions, Mr. Rhodes?

Mr. RHODES. I do not have any questions. I would like to make a general statement concerning the quality of the testimony we have had today. I think it has been excellent. And I think we owe quite a debt of gratitude to the Mine, Mill, and Smelter people for coming before us and giving us the facts and figures that they have.

Mr. METCALF. Mr. Fjare, any questions?

Mr. FJARE. No. Only to ask if it is the express desire of the Mine, Mill, and Smelter Workers Union to also include smelting operations in this piece of legislation.

The reason I ask that is that a great deal of your testimony has been grievances involving the situation in the smelting industry.

Does your union also suggest that this be included in this legislation?

Mr. SALVAS. Certainly we know that the problems are not confined to the mining section. The mining, refining, and smelting sections are related. Many of them are similar, accident problems, dust problems, as to the new methods being applied in both mining and smelting.

And the Congress' investigation into the industry should include the mining, smelting, and refining sections of that.

Mr. METCALF. Mr. Salvas, in relation to the previous statement, the legislation before us does not provide, as you know, for any regulation or inspection of smelters.

However, it was early decided that one of the duties of this subcommittee would be to determine what additional legislation would be necessary to recommend to the next Congress. We were not going to pass on any specific legislation, but make a general survey.

So we have welcomed testimony of the unions that represent smelter workers, and of the employers, who represent the management of smelters, to demonstrate some of the needs for safety or some of the reasons why we should not pass mine and smelter safety legislation.

I have nothing to add, except that I, too, want to compliment the witnesses today on a very well-prepared presentation, on giving us testimony that has been extremely helpful and informative to the committee; and I believe it will be important in the consideration of this legislation, by the full committee and by Members of Congress during the next Congress.

Do you have anything to add, Mr. Stern?

Mr. STERN. No.

Mr. METCALF. Then thank you, Mr. Salvas, Mr. Stern, and the other witnesses.

That is the last witness that we have scheduled for today.

Congressman Saylor has asked to testify. He is one of the cosponsors of this legislation, and we will be glad to hear him at his convenience.

Mr. ELLIOTT. Mr. Chairman, before we go, let me ask a question, so that I can make some plans.

Is it the intention of the chairman to try to finish tomorrow?

Mr. METCALF. We have the industry witnesses scheduled for tomorrow; and if possible, we will try to complete their testimony tomorrow.

Mr. ELLIOTT. Any more labor witnesses?

Mr. METCALF. This is the last of the labor witnesses.

Mr. ELLIOTT. Now, who are the industry spakesmen that will testify?

Mr. METCALF. We have a list out here. There is a representative of the American Mining Congress.

Mr. RHODES. Two, I think.

Mr. METCALF. And in view of the testimony given by Mr. Powers today, there is a representative of the Bunker Hill Co., who represents that Coeur d'Alene mining district. He is one of the representatives of the American Mining Congress.

Then there is the Superior Mining Association, Kennicutt Copper, and the Anaconda Co., which will close the hearings.

Mr. ELLIOTT. Well now, Anaconda is not listed on this list.

Mr. METCALF. No. But they are also scheduled for testimony.

Mr. ELLIOTT. That is six witnesses for tomorrow.

In view of that number, do you think we possibly ought to start a little earlier than we have been starting?

Mr. METCALF. Yes. Would you rather start in at 9:30?

Mr. ELLIOTT. I think so. That would give us more of a chance.

Mr. METCALF. This discussion has been as much for the benefit of the prospective witnesses for tomorrow as for the committee.

We are going to try to hear all the remaining industry witnesses tomorrow.

And in order to be sure that we will have adequate time for interrogation of these witnesses, the committee will start promptly at 9:30 in the morning.

The committee will be in recess now until 9:30 tomorrow morning.

(Whereupon, at 3:05 p. m., an adjournment was taken until 9:30 a. m., Wednesday, December 5, 1956.)

MINE SAFETY (METALLIC AND NONMETALLIC MINES)

WEDNESDAY, DECEMBER 5, 1956

UNITED STATES HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON MINE SAFETY OF THE
COMMITTEE ON EDUCATION AND LABOR,
Washington, D. C.

The subcommittee met at 10 a. m., pursuant to recess, in room 429, House Office Building, Hon. Lee Metcalf (chairman of the subcommittee) presiding.

Committee members present: Representatives Metcalf, Rhodes, Fjare, and Elliott.

Mr. METCALF. The subcommittee will be in order.

The first witness we have scheduled for this morning is Mr. Eckert, of the Lake Superior Iron Ore Association. We are glad to have you with us, Mr. Eckert.

STATEMENT OF WILLIAM F. ECKERT, A MEMBER OF THE SAFETY COMMITTEE OF THE LAKE SUPERIOR IRON ORE ASSOCIATION; ACCOMPANIED BY GEORGE A. BORGESON, MANAGER OF SAFETY AND CLAIMS FOR THE M. A. HANNA CO., HIBBING, MINN.; AND A. J. STROMQUIST, SAFETY DIRECTOR FOR THE CLEVELAND-CLIFFS IRON CO., ISHPEMING, MICH.

Mr. ECKERT. Chairman Metcalf and members of the Subcommittee on Mine Safety, on my right is Mr. George A. Borgeson, manager of safety and claims, M. A. Hanna Co., and Mr. A. J. Stromquist, Cleveland-Cliffs Iron Co., Ishpeming, Mich. Mr. Borgeson, as some of you know, appeared previously before this committee in Virginia, Minn. Both of these men have had many years experience in mining safety and should any of the committee wish to question them I am sure they will gladly cooperate with you.

The statement I am about to make will be very brief since the mining companies in the Lake Superior district have already testified before this subcommittee at the hearing held in Virginia, Minn., on August 22, 1956. They also submitted a written statement on behalf of the Michigan underground iron mines following the testimony that was taken at the subcommittee hearing held in Duluth, Minn., on August 24, 1956.

At the hearing in Virginia, and later by statement, the operating companies in the Lake Superior district stated their position and gave reasons why they felt no Federal legislation or no Federal inspection is needed in the iron mines they operate in Minnesota, Michigan, and Wisconsin.

Briefly these are as follows:

(1) There is already legislation on the books providing for mine inspection either by State inspectors or county inspectors or in some cases by both. It was pointed out in previous testimony these inspectors have the power ,if they choose to use it, to close mines or sections of mines they consider dangerous to the health and welfare of the employees.

(2) Under the union contracts at all mines, there is a provision covering the safety and health of employees. This provision not only provides for the various items of safety equipment to be furnished employees but also provides for safety committees made up of an equal number of union employees and representatives of management. Any member designated as representing a particular department may accompany, and usually does, the safety inspector of the company on an inspection of the department at least once each month, and may accompany any county or State inspector if required by law or agreeable to such inspector.

At the request of the union safety committee, one member may accompany management on its investigation of any serious or potentially serious accident. Safety committee meetings are held monthly with management and more often if a need is indicated. The contractual provisions of the contract are closely adhered to by both parties. Fine cooperation has been received from the union committees, which has contributed greatly to the fine accident records achieved in the Lake Superior iron ore industry.

(3) It is common knowledge today, backed up by careful accident analysis, that between 80 and 90 percent of all accidents regardless of industry are caused by human failure. It is our opinion this cannot be changed by legislation or inspection by more agencies. Education then is the key factor to improving the accident situation.

Through the years, the educational and safety activities of the United States Bureau of Mines, with offices in Duluth, Minn., has furnished invaluable assistance in the promotion of safety programs in the Lake Superior district. In their field of training the Bureau's well qualified personnel conduct courses in mine rescue, first aid and accident prevention.

They also furnish valuable assistance in combatting any mine fire and in the investigation of same. When needed they also assist in other safety and health activities such as dust and ventilation surveys, mine inspections, and specific safety problems. Any expansion of the Bureau of Mines present activities would be welcomed by the iron ore companies. A greater number of motion picture films dealing with metal mine safety, sound slide films and posters would be a great help to any mining company safety program.

(4) In talking to various safety supervisors in the Lake Superior region it seems to be the concensus of opinion that occasional Federal inspections under a Federal mining code would in many cases weaken the individual safety programs. With minimum requirements set by code it would make it extremely difficult to get local mine management to exceed these requirements.

(5) The proposed legislation would give the Bureau of Mines the legal right of entry in any mine. Mr. John A. Johnson, Chief, Division of Safety, United States Bureau of Mines testified before this

committee on August 24, 1956, that even though they had no legal right of entry they were never refused entry in any mine in the Lake Superior district. Whether this same situation exists in the rest of the metal mines in this country I do not know.

(6) All of the companies in this area feel they have very rigid and effective safety programs. This is proven by the many statistics published by the United States Bureau of Mines and also the National Safety Council. For example, Bureau of Mines Circular No. 7744 shows a very favorable declining trend in both frequency and severity in the underground mines in the Lake Superior district from 1946 through 1954. Another important index of mine safety to be considered is the cost of workmen's compensation for mine injuries. In the State of Michigan the published insurance company rates approved by insurance commissions show there are nine other industries in the State of Michigan that have higher premium rates than underground mining.

I have attempted in a few words to give you the main reasons why the operators of iron ore mines in the Lake Superior district do not want or feel they need Federal mine inspection of a Federal mining code. If there are any questions the committee would like to ask Mr. Borgeson, Mr. Stromquist, or myself, we will endeavor to answer them to the best of our ability.

Thank you.

Mr. METCALF. Thank you, Mr. Eckert, for your very helpful statement. I wonder if Mr. Elliott has any questions?

Mr. ELLIOTT. I refer to No. 4 in your statement, Mr. Eckert, in which you say—

> It seems to be the concensus of opinion that occasional Federal inspections under a Federal mining code would in many cases weaken the individual safety program.

Mr. ECKERT. I mean by that, Congressman Elliott, that we feel up in the Lake Superior district that most of the mining companies would probably far exceed any minimum requirements. If we want certain things from local management, they are just liable to point their finger to the code and say, "No; that is as far as the law tells us we have to go." In other words, the door is wide open now and anything the safety inspectors want, they usually get.

Mr. ELLIOTT. I believe the experience has been in the coal mining field that Federal inspection has contributed at least very greatly to the decrease in the accidents in the coal mines. That is at least true since we have had Federal inspection, we have had many fewer accidents than we had before.

Mr. ECKERT. I don't know, but I think perhaps that might be covered in later testimony today. I think there seems to be some doubt about that particular question. There has been a declining trend, but as far as I can find out, the trend continues on as it has been in the coal mines. I know that is true in one coal mine we operate. Our record is not any better today than it was prior to the Federal inspection.

Mr. ELLIOTT. That is all of the questions I have.

Mr. ECKERT. I would like to ask Chairman Metcalf one thing, that during the past 2 days there has been a considerable amount of testimony regarding silicosis. We did submit a short statement on

silicosis in the Lake Superior region. We would like, if we are permitted, to file a supplemental statement giving more detail that we feel might be helpful to the committee. We could do this probably in the next week or 10 days.

Mr. METCALF. You will certainly be permitted to file a supplemental statement because the committee wants all of the information on silicosis or any other matter that we could have available.

We are beginning to get near the deadline for closing the record, to have it printed during this present 84th Congress. The staff advises me that we could go up until about the 17th, and so if you will have the statement in by the 17th it will be in the record. If not, we would put it in the file and have it available for use of the committee anyway.

Mr. ECKERT. That is fine.

Mr. METCALF. I will ask a few questions myself until my colleagues have familiarized themselves with your statement.

As you know, Mr. Eckert, we were very much impressed by the safety record that we found up in the Lake Superior region. We seldom meet a group of people so safety conscious as we did in our visit to the mines in Minnesota. We were not so impressed with the legislation in Michigan, as in Minnesota. I think there would be some difference of opinion as to whether or not there is an adequate amount of safety legislation in Michigan or in several other States.

As I understand your statement, you say that in view of the fine safety record and the record that you have established up in the Lake Superior region, you see no reason for a Federal mine safety code.

Now, almost the only compulsory thing in the proposed legislation or the legislation that might be proposed is this right of entry. Would you be opposed to giving the Bureau of Mines a right of entry for inspection purposes?

Mr. ECKERT. We feel up there we do not need it, because we have never refused that.

Mr. METCALF. We had that testimony to which you referred, and Mr. Johnson said they had never been refused but we had testimony from Mr. Elliott the other day that in Alabama the Bureau of Mines inspector had been denied a right of entry. If situations in other parts of the country would require a right of entry for inspection for pure air, and unsafe rock conditions, or something else, it seems to me that such legislation would not do anything to you at all. It would not harm you or it would not help you.

Mr. ECKERT. You are probably correct.

Mr. METCALF. It is the kind of practice you have already followed?

Mr. ECKERT. That is right.

Mr. METCALF. Now, except for the right of entry, there is not anything compulsory in any of this proposed legislation. It is merely reporting an advisory inspection, and probably the establishment of minimum codes.

I was interested in the question asked by my colleague from Alabama, the theory that establishment of a minimum code for the Lake Superior region would actually pull down your safety standards. I can see that where you have a region of very high standards such as you have in Minnesota that you would probably be above the minimum standard for the entire United States, but I doubt if you or Mr.

Borgeson or any of these people that we met in that Lake Superior region would let down because of minimum standards.

Mr. ECKERT. I did not mean it that way. I meant that a mine superintendent or someone else might give the safety department a rough time if we wanted to do something over and above it. It might tend to lower it, and I think that there is that possibility. That would not be true in all cases, but I think in some cases it could be true.

Mr. METCALF. I can see after having visited your area that you are one of the leaders in mine safety throughout the United States and you feel that there is not any need for further legislation. You are doing an outstandingly good job up there. As you have heard testimony here, there are other areas in the United States that perhaps are not doing the good safety job that some of you are doing, and there are other States that have not the good safety legislation that the State of Minnesota has.

That is one of the reasons for the demand for this legislation. Do you have anything to add, Mr. Rhodes?

Mr. RHODES. Mr. Eckert, we have had testimony here which seems to point to the fact that it is difficult to get data concerning accidents. It has been stated that sometimes this report sent out by the Bureau of Mines is filled out by mining companies, and sometimes it is not. Do you have any ideas as to how we might improve that situation so that the exact situation as regards mining and safety might be readily available to interested people?

Mr. ECKERT. No; offhand, I cannot, Congressman, because I am sure all of the mining companies in the Lake Superior district report very promptly to the Bureau of Mines.

Mr. RHODES. Are you testifying with regard to the Lake Superior district?

Mr. ECKERT. That is right.

Mr. RHODES. Of course, you realize that we are up against a national problem here?

Mr. ECKERT. That is right.

Mr. ELLIOTT. Did I understand a few minutes ago, Mr. Eckert, that actually you would have no objection to giving the Bureau of Mines legal right of entry?

Mr. ECKERT. It would not make too much difference as far as we are concerned.

Mr. ELLIOTT. Because you already grant them the right anyhow?

Mr. ECKERT. That is right.

Mr. ELLIOTT. But under the present situation, you might deny them the right?

Mr. ECKERT. I suppose technically we would, but it never has been done to my knowledge, or to Mr. Johnson's knowledge.

Mr. ELLIOTT. Do you not think that the United States Bureau of Mines inspectors ought to as a matter of law have the right to enter these mines where safety questions are involved?

Mr. ECKERT. If they could help the situation, probably yes.

Mr. ELLIOTT. That is all, Mr. Chairman.

Mr. FJARE. Mr. Eckert, in your opinion, the United States Bureau of Mines is doing a sufficient job, or do you think it could do a better job?

Mr. ECKERT. I think their facilities could be expanded along the educational line.

Mr. FJARE. There would be no objection on your part or on the part of the industry as a whole to expand that?

Mr. ECKERT. We would welcome any additional help in the present activities they are doing or even increasing their educational activities. We would welcome that.

Mr. METCALF. Thank you, Mr. Eckert, and your colleagues for coming before us. You will be permitted to file an additional statement before December 17. We appreciate your testimony and it has been most helpful and informative to the committee.

Mr. ECKERT. Thank you.

(The additional information referred to is as follows:)

PICKANDS MATHER & CO.,
Cleveland, Ohio, December 15, 1956.

Mr. RUSSELL C. DERRICKSON,
Chief Investigator, Committee on Education and Labor.

DEAR MR. DERRICKSON: Attached hereto is a statement prepared by Mr. Robert N. Downs, field supervisor of the Saranac Laboratory, covering the services they perform for the iron-ore companies in the Lake Superior district. Time did not permit the compiling of tables and figures, but I believe this short statement will permit the subcommittee to better realize the excellent job the mining companies have done on their own accord in dealing with the health and welfare of their employees.

Very truly yours,

W. F. ECKERT.

(The statement referred to is as follows:)

THE SARANAC LABORATORY, SARANAC LAKE, N. Y.,
FOR THE STUDY OF TUBERCULOSIS, OCCUPATIONAL DISEASE, AND INDUSTRIAL HYGIENE,
Ironwood, Mich., December 13, 1956.

The Saranac Laboratory has assisted in the supervision of an industrial hygiene program designed to detect and control pulmonary disease and dust-hazardous conditions in iron-ore mines located in the Lake Superior district of Michigan and Wisconsin. This program has been in continuous operation since its inception in 1933 and the results of the combined efforts of the operators, their physicians, engineers, and the Saranac Laboratory have been most gratifying in fulfilling the primary objectives.

It has been the accepted practice of companies participating in this program to examine all underground employees annualy and surface employees biennially, in cases revealing abnormalities, examinations are repeated at shorter intervals.

Chest roentgenograms, which are a requisite part of all examinations, are forwarded to the Saranac Department of Radiology, approximately 88,900 films of 14,200 applicants and employees have been observed since 1933. This medium of diagnosing pulmonary diseases while not infallible, is still unsurpassed when in the hands of the expert who has collaborated with the clinician and researcher. A correlation of X-ray interpretations with sound experimental theories, physical findings, and occupational histories, has produced a high degree of accuracy in diagnosis. X-ray interpretations are sent to respective company physicians and copies are furnished the field office of the Saranac Laboratory located in Ironwood, Mich. From these copies, comprehensive records are constantly maintained and collective data is always available to the physician and company.

On completion of annual examinations, summaries of abnormal chest findings are submitted to company physicians for consideration and proper disposition. Every effort is exerted in the placement of employees in occupations commensurate with their pulmonary abnormalities and over the past 23 years, this phase of the control program has gradually materialized and employees are now engaged in occupations considered compatible with their health and operating efficiency.

Through excellent cooperation, this program has proved to be very effective in the control of pulmonary disease and dust hazardous conditions in this industry.

(Prepared by Robert N. Downs, field supervisor, Saranac Laboratory.)

Mr. METCALF. The next witness is Mr. Charles Schwab.

STATEMENT OF C. E. SCHWAB, REPRESENTING THE AMERICAN MINING CONGRESS AND THE COEUR D'ALENE DISTRICT OF IDAHO, THE BUNKER HILL CO., KELLOGG, IDAHO

Mr. METCALF. We are glad to have you with us, Mr. Schwab and I am especially glad to have one of my neighbors from Idaho, and the Coeur d'Alene mining district.

Mr. SCHWAB. My name is C. E. Schwab. I appear in behalf of the American Mining Congress, a national organization of the mining industry. I also appear in behalf of the mining industry of the State of Idaho, and particularly for the Coeur d'Alene district in Shoshone County in north Idaho. It is this district which accounts for over 90 percent of Idaho's nonferrous metal production and in which is located our State's greatest concentration of underground mining operations.

I am employed by the Bunker Hill Co., Kellogg, Idaho, as a division manager and have spent the last 20 years working in the western mining industry.

On behalf of the American Mining Congress and on behalf of those I represent in the State of Idaho, we want to express our appreciation for being permitted to appear here today.

The American Mining Congress has publicly stated a very specific position with respect to mine safety and the following is quoted from the declaration of policy adopted in October of this year:

> We firmly believe that the providing of safe conditions and a healthy place to work is the primary responsibility of the mining industry. We strongly endorse a positive program, based upon the following policies:
>
> (1) That the mining operators participate in regional meetngs held perodically where safe working practices, safety education of employees, accident reports, and other problems relating to accident prevention are discussed and where ideas of safety men are exchanged.
>
> (2) That the mining industry continue to give high priority to the discussion of safety and health of miners in its meetings and continue its efforts to develop positive safety measures for improving the industry's safety record.
>
> (3) That the industry continue to promote and expand its medical research programs concerned with health and safety of mining employees.
>
> (4) That the industry publications continue to promote a strong safety campaign and show by experience and economic fact the benefits to employees and industry of an aggressive safety program and that mining operators support this campaign by contributing safety ideas and experience which have proven worthwhile in their operations.
>
> (5) That the mining operators stimulate and support greater activity in the field of safety education among employees on and off the job and that management promote and actively support their safety organizations and encourage employee participation.
>
> (6) That the Bureau of Mines continue and expand its activities toward developing and disseminating improved techniques in mine accident prevention and promotion of mine safety education. Adequate additional funds for the Bureau to carry out this important program should be forthcoming. We firmly believe that any necessary governmental safety regulations should come only from within the governmental structure of the States.

In presenting our opposition to the subject matter of this hearing, we believe, because of previous testimony by the staff of the United States Bureau of Mines, it is unnecessary to present any statistics on a national basis. Our source for such data would also have been the Bureau's figures and we would be repeating information now available to your committee.

We cannot emphasize too strongly, however, that this national record speaks best for itself in showing the regular and steady im-

provement in both severity and frequency of accidents in noncoal mines.

Such improvement has not occurred due to some fortunate coincidence. Rather, it came about through the joint and cooperative effort of four major groups:

(1) The Bureau of Mines: The Bureau for many, many years has been recognized as an authoritative source of vital information for our industry. Particularly in the field of health and safety this organization has had a major role in research for better methods of accident prevention, for control of hazards to health, and for education in safety programs.

(2) The mining industry: The general activity of the industry is defined in the policy statement I have just read. We believe that the industry has accepted the prime responsibility which rightfully belongs to it to improve safety and health conditions of underground operations. It is aware of the problems which must be solved and is continually striving for a solution.

(3) Employees and their unions: Employees in the noncoal mines in the United States are almost universally represented by organized labor. Most of the collective bargaining agreements set forth contractual provisions on the subject of safety and health. Many contracts establish labor-management safety committees who perform a variety of functions. Monthly or semimonthly meetings take place at which time company and union representatives review recommendations and suggestions for safer working conditions, analyze accident reports, and promote accident prevention and the elimination of health hazards.

(4) The several States, either through elective or appointive processes: Most States where noncoal mining occurs to any degree have an office of mine inspector. This office is assigned the responsibility of underground inspections and accident investigation and prevention. Generally, these State officials carry out their duties within the framework of State mining laws or State mining codes. In many States where there is a concentration of underground mining, deputy mine inspectors are also appointed to assist mine inspectors. In a few States this work is carried on by county mine inspectors.

The importance of the work of these four groups should never be underestimated. We believe nothing should be done which would jeopardize the steady progress now being made. We can see no reason why the Federal Government need further invade this field of endeavor. We particularly oppose any step that would tend to convert the Bureau of Mines, which is now of so much help to the industry and to the employees, into the status of a "policeman." Changing the Bureau to this status could only impair the close working relationship and mutual confidence which the industry has had with it.

The proposed bills also would create a conflict of responsibility between State or local mine inspectors versus Federal mine inspectors. Presently the State and local mine inspectors perform their duties in accordance with State or local laws or codes and they have definite knowledge of their responsibilities. They answer to the people of their State, if an elective position, or answer to another elected official, if an appointive position. To superimpose a Federal mine inspector in addition to a State or local mine inspector could only cause confusion.

If changes are needed we submit that these should occur at the State or local level and to the degree that such revisions meet the need of the people of the States involved. Also, such revisions must be made in a manner which can assure to the States the growth and development of their natural resources. This is of particular concern in many mining States where the production of metals contributes such a vital part to the State's economy.

We wish to emphasize that the explosion and fire hazard, which was the principal reason for enactment of the Coal Mine Inspection Act, is not a material factor in noncoal mines, and we see no reason to apply that type of legislation to such mines.

In place of the proposed legislation, we recommend a strengthening of the health and safety programs now conducted by the United States Bureau of Mines in the metal and nonmetallic mining field. We are advised that for the fiscal year 1957, funds available for noncoal safety and health programs by the Bureau are about $644,000. We also understand that there has been no substantial increase in allocation of funds for this purpose for a number of years except to absorb increases in the costs of maintaining the program as it exists today.

Therefore, we would suggest that this amount be doubled, or at least increased by $500,000, to provide funds for the Bureau to expand its staff and its activities for research in health and safety and improved techniques of mine accident prevention, and for mine safety education. A similar situation exists as to the United States Public Health Service, which has done excellent work in the study and prevention of occupational diseases; the existing program of the Public Health Service in this field could also be expanded to good advantage.

In reference to the State of Idaho, while statistical data for underground mining is collected in the office of mine inspector in Idaho, such records are similar to those which have been made available to the subcommittee by the Bureau of Mines staff. A table is attached showing the 1952–55 lost-time accidents in underground mining and the frequency and severity record for the same period.

(The table referred to follows:)

Accidents in Idaho mines

Year	Man-hours worked	Lost time injuries	Number of days lost	Frequency rate	Severity rate
1952	1,718,940	315	17,261	183.25	17.02
	1,588,056	288	9,809	181.38	6.18
	1,570,023	274	30,410	174.45	19.36
	1,585,149	247	16,241	155.82	10.24
1953	1,546,727	254	9,694	164.22	6.27
	1,510,199	232	15,721	153.62	10.41
	1,426,813	235	9,545	164.70	6.69
	1,463,345	232	20,302	158.54	13.87
1954	1,350,120	208	22,009	154.06	16.30
	1,411,340	200	22,597	141.71	16.01
	1,398,166	204	15,886	145.91	11.36
	1,343,782	192	12,989	142.88	9.67
1955	1,373,837	186	31,992	135.39	23.29
	1,345,602	154	12,201	114.44	9.07
	1,221,443	161	12,304	131.81	10.07
	1,146,558	143	6,572	124.72	5.73

NOTE.—The above figures are for underground operations only. Frequency is the number of lost-time accidents per million man-hours worked. Severity is the number of days lost per thousand man-hours worked.

Source: Quarterly Reports of State Mine Inspectors' Office.

In emphasizing our opposition to the proposed legislation we point out the following:

(1) During the last 10 years there has been a marked decrease in fatalities from accidents in the Idaho mining industry. Based on the number of accidental deaths per man-hours worked, this reduction has amounted to nearly 50 percent when compared to the previous 10 years.

(2) There has been a corresponding steady decrease in nonfatal lost-time accidental injuries, both from the standpoint of frequency and severity.

(3) The State has a mine inspector and, since 1952, a full-time deputy mine inspector. All the State's mines are inspected by the State officials from 2 to 5 times each year.

(4) Idaho has a "mining law" which among other things sets forth the duties, responsibilities, and powers of the mine inspector. In late 1952, after cooperative work and exhaustive study by the industry, unions, State officials, and United States Bureau of Mines, a safety code for safety standards and practices for mining in Idaho was adopted.

(5) During the frequent inspections by State officials, many recommendations or suggestions are made for improved safety and health conditions. During the last 10 years there have undoubtedly been several thousand such recommendations made and on only 52 occasions were "repeat warnings" necessary, and only once did the inspector have to use the provisions of section 47–107 of the mining laws to enforce his recommendation.

(6) The Idaho mining law, under section 47–106, has a provision for filing of formal complaints by any individual if it is felt that a working area is unsafe. However, during the last 10 years, not one such complaint has been filed.

(7) For many years collective bargaining agreements in Idaho have included provisions concerning safety and health. These provisions have been expanded to establish going labor-management safety committees who meet regularly to review accident reports, suggest improvements to reduce hazards, and generally concern themselves with the overall problems of safety and health and of improving working conditions.

In stressing the foregoing it is not intended to imply that there is any complacency on the part of anyone. Rather, we submit that this cooperative effort of industry, Idaho State officials, unions, and United States Bureau of Mines' staff has shown results and, we believe, will continue to show additional improved results in the future.

With respect to silicosis, Idaho includes this as a compensable occupational disease under the State's workmen's compensation law in a similar manner as an industrial accident. We have no statistics to support our belief that the incidence of silicosis in Idaho has declined sharply during the last 10 or 15 years.

We believe that those claims for silicosis now being paid have in the great majority of the cases had the exposure prior to 1935, which is before the marked improvements made in the last 20 years for underground dust control. We would also call attention to the practice of assigning employees with disabling silicosis to surface jobs whereby they continue their employment.

Mr. METCALF. Thank you for your statement.

Mr. ELLIOTT. Mr. Schwab, would you object to giving the Federal mine inspectors the right of entry into the mines in your area, or the mines that belong to your organization?

Mr. SCHWAB. Insofar as I know, Mr. Elliott, there has never been any occasion that the Bureau of Mines' people have been refused entrance to any mines in Idho, and in fact we call them in and ask for their help.

Mr. ELLIOTT. Would you object to Federal inspectors having the same right?

Mr. SCHWAB. I was speaking of United States Bureau of Mines personnel, Mr. Elliott. In making the statement that to my knowledge they have never been refused permission to enter our mines, and also on many occasions we ask them to come and be of help to us. Our point is here, however, that their staff and their funds available for work in our State and probably in other States, just won't spread far enough to do all of the work that we think properly could be done.

Mr. ELLIOTT. That is all for this time, Mr. Chairman.

Mr. RHODES. Mr. Schwab, as I gather, your situation now is that the Bureau of Mines people are perfectly willing to come in and help the industry whenever they are asked and you directly use their service, is that right?

Mr. SCHWAB. I would like to make clear, Mr. Rhodes, that to the extent they have staff and they have money available to them to come, that is true, sir.

Mr. RHODES. But the actual inspection function is performed by the State and in some areas the counties. In other words, the Federal people come in when you ask them and they make recommendations but there is no legal authority back of their recommendations whatsoever?

Mr. SCHWAB. No, sir. Our State mining inspectors also call upon the United States Bureau of Mines people to come in and be of help to them in technical problems which they themselves cannot handle or do not have the apparatus to test, and so forth.

Mr. RHODES. I can see the possibility of a great amount of confusion, as I think you pointed out on page 4 of your statement here, that if you put another echelon of inspectors in this mining picture, you may have the inspectors differing as to the methods to be used. Then, would not the mines be in the position of choosing which inspector they might have to obey?

Mr. SCHWAB. I think that is true of inspectors, Mr. Rhodes, and I think it is also true of codes. After almost a 2-year study, the State of Idaho established a mining code. To stack on top of that an additional Federal mining code, would put us in a position of not knowing which code is going to be binding. It took a terrific amount of time and effort to get that first code, which I think is an outstanding code as far as underground mines are concerned.

Mr. RHODES. I take it, however, that the mining industry is very much in favor of expanding the function of the Bureau of Mines insofar as it refers to research and development of health and safety practices. Now, I would like to ask if you have any ideas as to how information concerning conditions in mines and accidents in mines might be correlated better or reported better so that the persons interested in safety would have better facts available from which to work out a stepped-up system of research and development?

Mr. SCHWAB. I think some of the questions, Mr. Rhodes, that I have heard asked here in the last 2 days confirm our idea that the delay, for instance, in even getting the statistics printed is simply a matter of the staff and the money available for the Bureau to do it, and there was also some reference in the testimony yesterday to the breakdown of the statistics, which had then been changed, so as to simplify them.

There were not enough hours in the day and dollars available to continue it as it was. We feel that that is a very important matter that should be considered by this committee. We have the same position, I think, Mr. Rhodes, with respect to the United States Department of Health. I think that there is a wealth of statistics on occupational diseases that is available simply for the asking, but someone must go after it and must dig it out.

I think in these mining areas, and in clinics and in physicians' offices, I think the survey would provide the industry and all other interested parties with literally a wealth of data. But someone must go after it and we think that is a proper function of either a joint effort between the United States Bureau of Mines and the Department of Public Health, or one or the other of those two agencies which are now familiar with the industry.

Mr. RHODES. Is there any possibility that the industry itself, perhaps through the American Mining Congress or some other organization could collect data and correlate it and take over a part of that particular function of the Bureau of Mines? Perhaps that might be done in conjunction with the labor unions or as perhaps an expansion of the mine safety committee, which as I understand in many instances includes both members of labor and the companies.

Mr. SCHWAB. I am sure we would be of whatever help we possibly could to collect it. It takes some agency, perhaps like the Department of Health which decides how it wants the information collected, and what type of a report or statistical summary it would like to have available for the general public.

I do not think the Mining Congress should set those standards and decide what we are going to ask for and what we are not going to ask for. I think there should be some direction. But certainly, the American Mining Congress and I am sure the unions, at least the ones I have been familiar with, would try to be of any help they could.

Mr. RHODES. Might I ask a question on this chart back here. I do not quite understand it. It is headed "Accidents in Idaho Mines," and over to the right-hand side you have the years listed but under each year there are four sets of figures.

Mr. SCHWAB. We report to the mine inspector's office in Idaho on a quarterly basis, and perhaps the figures yesterday were on an annual basis, which would just be a total of these columns.

Mr. RHODES. Except for the severity rate and the frequency rate.

Mr. SCHWAB. You would have to divide those to get the proper answer.

Mr. FJARE. Mr. Schwab, does the American Mining Congress conduct a program of safety engineering or education within the industry?

Mr. SCHWAB. Quite actively, Mr. Fjare, particularly through its publications and the dissemination of information, and secondly in

the matter of getting the people together who are concerned with safety, such as safety engineers, ventilation engineers, and industrial engineers. In meetings regularly, where there is free and frank open discussion of everybody's problems, and a dissemination of what is happening here and how it is worked out, and that it might be applied someplace else, they are held chiefly along those lines.

Mr. FJARE. My purpose in asking the question was brought about by the fact that when we held our hearings in Butte, I think the members of the committee that were there at the time were quite impressed with the Anaconda Co.'s research and constant effort to solve the safety hazards in their mining operation in Butte.

Is that information made available to other mining companies, for instance, to cite an example of the development of microdyne, a dust-removal apparatus that they were experimenting with? Is the mining industry aware of what is going on there? Is that information made freely available to the industry?

Mr. SCHWAB. That is right, and also there is quite an exchange of personnel. For instance, Mr. Warren, and I do not know whether Mr. Warren testified or whether you gentlemen met him from Anaconda, comes over to our district regularly and we have our meetings with our people and he is there and he talks to us and tells us about all of these new things and we, in turn, try to trade information with them. There is quite an interchange of information.

Mr. FJARE. That is a common thing, and you are just not citing one example?

Mr. SCHWAB. No, sir. A typical example is, for instance, at the annual meeting of the Mining Congress, the information which you heard here from Mr. Doyle and Mr. Flinn was presented to the industry. I can hardly remember picking up a copy of the publication which does not have some reference in it to something about safety, the publication of the American Mining Congress, the Mining Congress Journal, a monthly publication.

Mr. FJARE. In your opinion, Mr. Schwab, is the effort on the part of the industry showing an increase toward trying to improve the safety conditions in the mines through this method, or is it pretty much a static situation?

Mr. SCHWAB. No, sir; based on my experience over the time that I have been associated with it, Mr. Fjare, it is a constant and a growing thing. More people are employed, for instance, at the safety department level. It seems to me more people are going to national meetings and industrial health meetings, often conducted not only by our industry but by the medical profession, for instance. It is more and more all of the time.

Mr. FJARE. Do you feel or do the members of the American Mining Congress and the members of the industry feel that this enthusiasm to improve these conditions, would it be jeopardized by enactment of this legislation which we are considering at the moment?

Mr. SCHWAB. Jeopardized to the extent that you superimpose on what is being done now by a large group of people who pretty well know where they stand. I think the question relating to the efforts of the States to do their own job with State or local mining inspectors is a point that is of deep concern to us. Who is going to have the responsibility for this? There is this control and this inspection and who is going to do it?

Mr. ELLIOTT. Mr. Schwab, on page 3 of your statement I note that you say in discussing under (1), the Bureau of Mines, and I quote:

> Particularly in the field of health and safety this organization has had a major role in research for better methods of accident prevention, for control of hazards to health and for education in safety programs.

Then, later I get the impression from your statement that you feel that these activities should continue to be carried on by the Bureau of Mines, in an effort to be helpful to the industry.

Now, my point is this: If the Bureau of Mines is to reach the maximum degree of efficiency in advising the mining industry on methods of accident prevention and main causes of industrial diseases and that sort of thing, must not it have, as a matter of law, the right to enter these mines?

Mr. SCHWAB. I think, Mr. Elliott, if it had been denied, I heard the instance cited here the other day, and if it had been denied to any degree, any information that the industry has or any information that the States have, there might be a case in point. We have worked cooperatively with these people for so many, many years, and we certainly respect them and we think they can do a much better job with more funds and more personnel than they now have, and therefore, my answer to your question is that I do not think that that is necessary.

Mr. ELLIOTT. Certainly under existing conditions, they might be denied. Should the situation exist that the officials of the Bureau of Mines might be denied that right of entry? That is a question that I am trying to resolve in my mind, and I turn here to the summary of this bill, H. R. 9343, that we have before us and I find, and I quote in part from this:

> It empowers the Bureau of Mines to inspect and investigate metallic and nonmetallic mines and quarries for the purpose of obtaining information relating to health and safety conditions therein for the purpose of obtaining information relating to the causes of accidents involving bodily injury or loss of life therein, or causes of occupational diseases originating therein.

Now, the bill says that:

> The officials of the Bureau of Mines, in effect, should have that power as a basis for getting (a) the most effective use of public funds for the protection or advancement of public health and safety therein, and (b) preparation and dissemination of educational materials in the interest of public health and safety therein.

Well, now, I cannot for the life of me see any real reason why in an industry such as this where there are lots of hazards, and where we recognize there are—and where your industry recognizes there is and takes great steps to try to prevent them—I cannot see any reason why the officials of the Bureau of Mines should be excluded under any circumstances. My personal feeling is that they should have the right to entry into these mines. I don't think that you are going to be able to get good advice from the Bureau of Mines on matters of accident prevention and causes, and prevention of industrial diseases unless they have the right to enter.

Now, you say they have the right, and you let them enter when you want to. But should it be dependent upon that? That is the question that I am having a great deal of difficulty resolving. You give them the right now, but you also can take that right away under the existing conditions.

How can the Bureau of Mines, as a matter of principle, collect statistics and figures and disseminate them unless it has the privilege of getting right at the root of the matter and making its own inspections and investigations?

Mr. SCHWAB. I think it is strictly a question, Mr. Elliott, of whether more has been accomplished in the past by the cooperative effort of all of the people involved here than would be accomplished under the proposal before your committee.

Mr. ELLIOTT. You do not mean to tell me, Mr. Schwab, and I know you do not—it would be unthinkable to me that you would certainly—that if we pass this little bill which actually does practically nothing except to give rights where privileges are now enjoyed, as pointed out by you, you do not mean to tell this committee that that is going to cause the mining industry and the unions involved in the industry to suddenly stop this cooperation that is going on now among the various elements?

Mr. SCHWAB. No, I do not think so, Mr. Elliott, of course not. You are absolutely right.

Mr. ELLIOTT. I did not think that you did. That is all, Mr. Chairman.

Mr. RHODES. But it is possible that we have a situation here, is it not, Mr. Schwab, where maybe a teaspoonful of medicine is good for the patient but a tablespoonful might kill him. As far as the safety program is concerned, if you get too many people involved, you disrupt relations which have been in existence for a long period of time, and you may find yourself going backward instead of forward. Is that the gist of your testimony?

Mr. SCHWAB. I think that that is correct, and it is that first step that is of concern to us. That is where does the trail lead, so to speak?

Mr. RHODES. We heard the testimony of Mr. Burke, of the steelworkers the other day, who freely admitted that as far as he was concerned this was just a "foot in the door." I might say as far as I am concerned, that if you did not have the fear that this might lead to some sort of Federal domination of your mine inspection system, and through that maybe some of your mining operations, you people would be singularly blind to the state of the facts.

Mr. SCHWAB. I think I can only agree with you, Mr. Rhodes, that it is the first step in that direction, and our concern is, No. 1, what happens at the State level and what is going to happen to this very close and cooperative effort that has been going on for a long time when one agency attains a different status than they have now and has other rights than they have now. How will it be looked at?

Mr. RHODES. It would be my hope, Mr. Schwab, that the cooperative effort which now exists between the companies, the American Mining Congress, and the unions involved, and the Bureau of Mines, would continue and that we would be able to help it continue by giving the Bureau of Mines sufficient money to do the job which must be done for this industry. But I also hope that the unions and the companies involved will continue to expand their own activities in this particular sphere.

I think from the testimony of the unions, yesterday at least, that they are certainly willing to go ahead and cooperate with almost anybody who is interested in safety. From knowing the people in

the Mining Congress and the Bureau of Mines, I am sure they feel the same way. I am not at all sure that passing this legislation would have the effect which all of us here would hope it would have if we passed it. That is to step up the safety program and to prevent accidents in the future.

Mr. METCALF. Mr. Schwab, when was the new Idaho Safety Code adopted?

Mr. SCHWAB. 1952, it was a revision of an old code.

Mr. METCALF. It was rather an extensive revision, I take it?

Mr. SCHWAB. Extremely extensive.

Mr. METCALF. And the statistics that you submit for the decline in both the frequency and the severity rate of accidents stems from the adoption of that new Idoha Mine Safety Code in 1952?

Mr. SCHWAB. Certainly, Mr. Chariman, the adoption of that code was of great assistance to our State and the people involved in our industry; yes, sir.

Mr. METCALF. Now, if the State of Idaho had not adopted a modern mine safety code at a comparatively recent time, would you be prepared to come here and personally present the same testimony that you have presented today?

Mr. SCHWAB. I do not know that I would agree, Mr. Chairman, that the figures necessarily would show any different record than they now do. Most of the major mining companies are working at this all of the time. For the first time, you have revised a code to set up some more modern standards than you had previously, and that is what, basically, it has amounted to.

For example, the regular physical examination of people who run underground hoists was something that we had not had in our code before, and we set up some rules that people are governed by under this code now. But prior to that time, many, many companies had those regular examinations anyway. I do not know what the record would have been. I think this code helps, yes, and I think it sets up a set of rules that everybody works by at the same level. It is designed to fit our State.

Mr. METCALF. Well, as I understood, the proposition you were presenting to this committee was that you felt that the first responsibility was that of the industry, and I think every member of the committee is in agreement with that. Then, you felt that there had to be some inspection but such inspection and such regulation as was needed should be made by the States on a State level. The State of Idaho now has a modern mine safety code that is adequate. But there are other States in the Union that do not have such a modern mine safety code as the State of Idaho, the State of Colorado, or some of these other States, that have only recently revised their codes.

Can you say that they, too, have adequate safety regulations and safety inspection?

Mr. SCHWAB. I hesitate to be put in the position, Mr. Metcalf, of telling another State what to do. The people in that State should well decide for themselves what they want in this particular matter and certainly the industry and the unions are going to be leaders in those matters.

Mr. METCALF. Certainly the industry and the unions should be responsible, and I believe they have assumed a good deal of the responsibilities that are theirs. But there are States in the Union as a result of

testimony before this committee—we have found that there are States in the Union—that have not met those responsibilities. Are we to say, "Well, then, it is up to the State to determine that they are going to continue to allow men to work in unsafe and hazardous conditions?"

Mr. SCHWAB. I think the basic question is who is going to do it and who will do it and whose responsibility it is. Our position is that it is the responsibility of the several States to do it, Mr. Metcalf, and that is where it should be done.

Mr. METCALF. Now, you heard Mr. Powers' testimony yesterday?

Mr. SCHWAB. Yes, I did.

Mr. METCALF. While he was testifying, Mr. Stern put in a table and discussed it, and he pointed out as you have pointed out that the accident rates in Idaho and the frequency and the severity rates have declined. But he also pointed out that the frequency rate in Idaho during the period of 1953–55 was nearly five times the national average. That was for underground mines and for open-pit mines. The severity rate for underground mines was 2.8 times the national average.

So, even if there is a continued decline, probably as a result of new safety conditions, Idaho still lags behind the national average.

Mr. SCHWAB. That is why I say that no one is complacent. We have a lot of work to do, and we realize that, and we all do.

Mr. METCALF. I do not know whether you had an opportunity to see the chart that was put into evidence yesterday, but the Coeur d'Alene district is largely a lead and zinc mining district; is that not right?

Mr. SCHWAB. That is correct, sir.

Mr. METCALF. The national average fatality rate for lead and zinc mining, according to the calculated trend here, is a rising trend.

Mr. SCHWAB. I do not mean to ever depreciate the fine work that the mine and mill group did in presenting this testimony, but I would like to point out that depending upon where you take your base point at the start of the graph determines how your trend line looks. Referring to Mr. Johnson's figures which were submitted to you Monday, that line will always be a zigzag line and the trend will depend upon where you start at the base. I am referring to what is now the left-hand side of the chart to me.

Mr. METCALF. He started in 1947, as Mr. Stern explained, I think. He used that as the first normal post-World War II year.

Mr. SCHWAB. It would depend on the base you take, and how far you take it to the right with respect to what your line will become.

Mr. Johnson's testimony, Mr. Chairman, which I believe was contained in a table J, showed the overall national picture for lead and zinc——

Mr. METCALF. I would like to have you comment on Mr. Powers' statement about this. I know you are representing the American Mining Congress, and this is a complaint largely about the smelter operations in the Coeur d'Alene district, but if you will or if you want to, I would like for you to comment on the fact that there has been an astounding increase in the number of claims filed for lead poisoning in that district. Can you tell us the causes for that?

Mr. SCHWAB. I do not know that I can tell you all of the causes for that, Mr. Metcalf. We had a sudden and a very severe flareup

and I think the problem is whipped now through about 5 or 6 things that have been done. But here again we used the joint effort of ourselves, and our union safety committees, and the State mining inspection, and our State department of health people. We called in outside ventilation experts. It was just a flareup that happened, and it happened all of a sudden, but there were about 6 or 7 things that had to be done to finally get the thing remedied.

I think that you are aware, Mr. Chairman, that lead poisoning is an occupational disease which can be eliminated through body wastes and there is no total impairment involved.

Mr. METCALF. You think that you have that particular hazardous situation salved by virtue of cooperation with these various people, and they have all worked together to help you?

Mr. SCHWAB. Let me make it clear, we have never got any of them solved to our satisfaction, Mr. Chairman, until we get a zero in that column, which may be unattainable, but it does not keep us from trying. We have this flareup solved; let me put it that way.

Mr. METCALF. I am sure that you and Mr. Eckert, and our preceding witnesses are going to continue to work for that zero, whether it is established by advisory boards' minimum regulations by the Federal Government or not.

Now, I agree with Mr. Elliott that you are going to work toward that no matter what the standards are going to be.

We had testimony from Mr. Johnson that only about 75 percent of the members of the mining companies made voluntary reports. So that information upon which this committee and your organization and the industry and the unions have to base their research and their efforts is based upon a voluntary answer of only 75 percent of the mining companies representing perhaps 90 percent, perhaps more, of the production.

To pursue the course that Mr. Elliott opened up a few minutes ago, most of those 75 percent of the companies that are involved are the companies such as the company that you represent and the company that Mr. Eckert represents that are concerned and interested in safety. But there are some who are not concerned and who are not interested, and not even concerned enough to makes the annual report on a voluntary basis. That is to the Bureau of Mines.

Now, should not we have some way to compel them to make the same reports to the Bureau that you make?

Mr. SCHWAB. I believe, Mr. Chairman, if the Bureau had a greater staff, and I am supplementing what Mr. Johnson said, their fieldmen can generally get to these small operations and get the information they desire. It is strictly a matter of a small operator with maybe one bookkeeper in the office and this report rolls by, and he simply does not get to it to get it out. I do think that you will find improvement in that, when you expand the Bureau's field staff.

I believe Mr. Johnson testified that they do call on them now, to the extent that they have men in the field to actually help them get the material out. I do not think people are trying to deny it to them.

Mr. METCALF. Well, at least, a man who is killed or injured in a small mine is just as dead or just as disabled as a man who is injured in your mine or the Anaconda Co. mine or some other large mine that is cooperating with all of these safety endeavors.

Mr. SCHWAB. That is right.

Mr. METCALF. It seems to me that there should be some way to compel not only reporting but standardization of reporting facilities so that we can find out what the people are doing in the mines not only where they are safety conscious but in mines where they are negligent of enforcement of safety procedures, and I do not believe we have the reporting from that latter type of mine. If they are negligent about sending in their report, they are probably negligent about enforcement of other safety regulations in their mines.

Mr. SCHWAB. I do not know whether that would be a corollary, necessarily. It would depend upon the operation.

Mr. METCALF. That might be true.

Mr. SCHWAB. I know a number of small mines, as you probably do too, and it is just a matter of getting around to all of the detailed work. We do feel that with increased Bureau staff and Bureau funds that so much more of that could be run down. As I said at the start, you still have a cross-section of well over 90 percent of the total employment in the industry, and any figures which would be in addition to that could hardly change the great bulk that are already in. I am talking statistically now.

Mr. METCALF. I think that that is all we have at this time.

Mr. ELLIOTT. I have one other question. Do you have figures, Mr. Schwab, indicating how many people are employed in the metallic and nonmetallic mines?

Mr. SCHWAB. Nationwide, you mean?

Mr. ELLIOTT. Yes.

Mr. SCHWAB. No, I do not have them personally, but I am sure that they are available.

Mr. ELLIOTT. Did Mr. Johnson give that in his testimony?

Mr. Johnson, did you furnish us a table yesterday that showed the employment in the various categories of metallic and nonmetallic mines, that is, both those working in underground and open-pit operations?

STATEMENT OF JOHN A. JOHNSON, CHIEF, DIVISION OF SAFETY, BUREAU OF MINES, DEPARTMENT OF THE INTERIOR

Mr. JOHNSON. I think I can get that for you. I have a rough idea what it is, but I would rather wait until Mr. Reece is here and he can give us that figure.

Mr. RHODES. I remember a table by States for 5 years and you would have to divide by 5 to get it.

Mr. JOHNSON. I think that that was table B.

Mr. SCHWAB. I think it is in the record, and unfortunately I cannot find the number of it.

Mr. METCALF. The number employed for 5 years and to get an average for a year you had to divide by 5, I believe.

Mr. SCHWAB. The first column reads 416,000, Mr. Elliott, which divided by 5 would give you the answer that you were searching for a moment ago, at least from this table.

Mr. ELLIOTT. It would be about 80,000?

Mr. JOHNSON. There is a separate table for quarries, and also there would be a number of employees not included there on metallurgical plants and refineries and smelters and so on, not included in those tables. One table is strictly metal and nonmetallic mines.

Mr. ELLIOTT. Does it show a breakdown as between the underground mines and the open pits?

Mr. JOHNSON. I do not think it did.

Mr. ELLIOTT. Will you give me some figures that would show that, Mr. Johnson, and submit them for the record?

Mr. JOHNSON. I will be glad to do that.

Mr. METCALF. Thank you very much, Mr. Schwab. The whole committee is appreciative of your testimony.

Mr. SCHWAB. Thank you, sir.

Mr. METCALF. The next witness is also a representative of the American Mining Congress, Mr. Woodburn, of Globe, Ariz.

We are glad to see you Mr. Woodburn, and we are glad to have you with us.

STATEMENT OF ORR WOODBURN, A DIRECTOR OF THE GLOBE-MIAMI MINE RESCUE & FIRST AID ASSOCIATION, GLOBE, ARIZ.

Mr. WOODBURN. Mr. Chairman and gentlemen, my name is Orr Woodburn and I reside in Globe, Ariz. I am the director of the Globe-Miami Mine Rescue & First Aid Association. I have been director of this association since January 1, 1918. The association is sponsored and supported by the mining companies in the Globe-Miami and Pioneer mining districts, namely: Inspiration Consolidated Copper Co., Miami Copper Co., Copper Cities Mining Co., Magma Copper Co., International Smelting & Refining Co., San Manuel Mining Co., and others.

I was with the Mine Safety Division of the United States Bureau of Mines in 1912–1913. I then became first aid, mine rescue and ventilation engineer for the Old Dominion Copper Co., a position which I held until the combining of the safety and health activities in 1918 into my present connection. Before joining the staff of the United States Bureau of Mines in 1912, I had been a division engineer for the Rocky Mountain Fuel Co. in Colorado.

I am appearing before your committee as a representative of the American Mining Congress, an organization which represents and covers the mining activities over the whole of the United States. I am also delegated to appear for and in behalf of the Arizona Small Mine Operators Association, an organization of approximately 3,000 members who are engaged in both large and small mining activities primarily in Arizona.

My intimate knowledge of the precautions that have been taken, and are being taken, by the mining industry itself to insure the safety and health of its employees prompts me to register vigorous opposition to proposals being considered by your committee which provide for Federal inspection of metal and nonmetallic mines and quarries. In Arizona, close and effective supervision of safety and health conditions is provided by the State through its departments of State mine inspector and State industrial commission, and these activities are supplemented by the advisory and educational work of the Safety Division, United States Bureau of Mines.

Establishment of a Federal inspection program, in my opinion, would merely duplicate these functions and could not improve on the effectiveness of the present mine safety and health measures. That

which is said regarding the Arizona setup on this subject applies with equal force to practically all noncoal-mining States.

The proposals which you are considering represent further invasion of States rights and the placing of matters which can best be handled by the States in the hands of those who may have little or no knowledge of the conditions within the State itself and the problems of the particular areas served by the State governments. In our opinion, there is no need for a law such as is proposed, and the public good would not be served in any greater extent than by present programs. We believe such legislation would only complicate present processes and serve no useful purpose.

This is particularly true when applied to the whole mining industry, for the conditions and circumstances under which mining is done in the various parts of the United States differ and require a local handling based upon the conditions actually prevailing. It would be impossible to write rules and regulations, as the measures before you indicate should be done by an advisory committee and the United States Bureau of Mines, which would apply equitably to the mining industry all over the United States.

In some cases, conditions would be imposed which could be met in one part of the country, but which could not be met in other parts of the country. That which might be lenient under one set of circumstances might also be impossible under another set. Yet in making rules and regulations, precedents would be set which might be demanded elsewhere even though the circumstances did not justify similar rules.

That which I present on behalf of mining in the State of Arizona and our mine health and safety programs is applicable in varying degrees to all of the non-coal-mining States. The State of Arizona has enacted and vigorously enforced many measures dealing with mine inspection and has provided for liberal compensation for injuries and health impairment to employees.

The hearty cooperation of both large and small mining companies in establishing safety departments at their own mines, promoting extensive research in all phases of mine safety and health, with especial emphasis on dust control, has resulted in an enviable record for Arizona mines and, in the past, in the receipt of many Bureau of Mines safety awards, such as the Holmes medal for safety.

We are in hearty accord with the views of the Interior Department as expressed in its report early this year on a bill similar to those now before you:

> This Department is of the opinion that the administration and regulation of safety practices with respect to metallic and nonmetallic mines and quarries becomes a problem primarily of local * * * and that Federal activities with respect to health and safety conditions in metallic and nonmetallic mines and quarries should be confined to the types of activity now carried on by the Bureau of Mines. Such activities include the accident-prevention courses for workmen and officials, assistance at disasters, investigation of disasters and unusual accidents, safety inspections at the request of companies, training in first aid, training in use of respiratory-protective equipment, dust and ventilation surveys, and publication of material on various aspects of health and safety.

An important activity in Arizona's mine safety program is the work of the State mine inspector's office. The State mine inspector of Arizona employs three deputies who make periodic and regular inspections of mines, both underground and open pit; and a dust engineer who

takes samples of mine dust and makes a report on same. The work of the latter is exclusively on dust control.

Following is a summary of the mine inspector's annual report for the last 3 years which will give an idea of the thoroughness of this mine-inspection work in Arizona:

TABLE I

	1953	1954	1955
Mines inspected Dec. 1 to Nov. 30	153	179	197
Inspections made, mines and leases	269	299	306
Men employed, 1st inspection, aboveground	4,548	4,801	5,110
Men employed, 1st inspection, underground	3,379	3,903	4,027
Men employed, 2d inspection, aboveground	4,259	4,600	4,427
Men employed last inspection, underground	3,453	3,422	2,655
Dust inspections, Dec. 1 to Nov. 30	83	82	89
Fatal accidents, underground	6	11	13
Fatal accidents, open pit	4	3	2
Serious accidents, underground	207	235	267
Serious accidents, open pit	71	39	46
Inquests attended	6	7	6
Written orders issued	116	63	70
Complaints filed	6	10	9

The above figures cover mine department employees only. Total employment by the mining industry at the present time, according to the Employment Security Commission of Arizona, is around 16,000. The figures in the report must take that into account.

Further details of the dust-inspection reports are given in the following:

TABLE II

	1953	1954	1955
Mines visited by dust engineer	77	150	145
Mines dust sampled	83	82	89
Impinger dust samples taken	364	401	405
Dust sample counts above 10 million particles per cubic foot	52	55	61
Dust sample counts between 6 and 10 million particles per cubic foot	48	46	48
Dust drilling samples, underground	67	55	62
Miners collaring holes dry	15	17	12
Miners collaring holes wet	52	38	50
Dust drilling samples, open pit	15	59	37
Miners dry drilling	7	2	3
Miners wet drilling	8	6	8

All employers desire to minimize accidents and improve health conditions from a humanitarian standpoint. Our mines and plants are small enough that we know our employees individually. They are our friends and neighbors. At the same time, it is good business to maintain safe working conditions because the insurance rates which prevail and the compensation paid are based upon the continually increasing wage rates.

The Arizona Industrial Commission handles compensation cases for occupational diseases, injuries, and fatalities in all industries, including mining, in the State. The employers carry insurance to cover the compensation paid to injured or disabled employees and, as the insurance rates are dependent upon the compensation costs of acci-

dents, it behooves the employer to keep accidents and health hazards at a minimum. Safety measures suggested by the commission's accident prevention department are gladly adopted by the employers as they are directly benefited by reduced insurance rates.

It was mentioned above that the conditions affecting health and safety vary in different States. Arizona—with its dry climate, its surplus of sunshine, and its comforts of outdoor living—has its own peculiar problem. These living conditions make the State attractive to those afflicted with tuberculosis. At the same time, the lack of rain has increased the dust problem all over the State and those who were tubercular are especially subject to damaging dust in their lungs. This has applied in the past to a large segment of the population no matter what their employment might be.

The problem of dust, and the damage which it might do, was recognized many years ago and in 1940 a very complete and comprehensive survey was made of the Arizona dust hazard by the Arizona Department of Mineral Resources. This survey included those who were employed out of doors as well as those who were employed in the mines or indoors. An exhaustive report was issued on the subject in 1941. Time and space do not permit a complete discussion of the findings, but it was very definitely determined that the damage from dust on the lungs among those having out-of-door employment was far greater than that existing among those employed underground in the mines.

The increasing susceptibility to the dust hazard of those with impaired lung capacity indicated that something should be done so that the hazard could be removed.

It might be interesting to this committee to recite the conclusions arrived at by this survey many years ago. They were as follows:

GENERAL

(1) The dust hazard has been eliminated from most of the mines of Arizona.

(2) True cases of disabling silicosis are so few that Arizona medicine is not yet in a position to administer a compensation law.

(3) Medical complexities of pneumoconiosis are such that it is impossible by X-ray, alone, to determine disability and prevent malingering for compensation.

(4) Hazardous conditions found in mines are due either to lack of facilities on the part of operators to determine a dust hazard, or direct violation of dust-control regulations on the part of employees.

RESULTS OF INSTRUMENTAL SURVEY

(1) Dust concentration in the larger cities of the State are higher than those generally encountered underground.

(2) It is probable that tractor farmers, cowboys, and highway construction crews encounter considerably more hazardous dust conditions than underground miners, under present-day Arizona practices.

(3) Questionable mine dust conditions can easily be corrected by application of simple dust-control practices developed in the large mines of the State.

LEGAL

(1) Worldwide attraction of the Arizona climate to tuberculars, and others with poor health and disabling lung conditions, renders the State's dust problem unusually complicated from a legal standpoint.

EMPLOYMENT POLICIES

(1) Employment of persons showing fibrosis is now being handled to provide maximum earning power with a minimum of restrictions.

As a result of the findings of this survey and the conclusions reached, all major mining companies in Arizona require a physical examination of prospective employees, including lung X-ray, and no employment since that time has been given to those with lung capacity impairment. The result has been that in Arizona the problem of silicosis among mine employees has been almost entirely eliminated except, of course, for the very rare cases of men whose employment started prior to the initiation of lung examination and a clear bill of health as a requirement for employment.

As silicosis is one of the occupational diseases connected with the mining industry, this disease has been given most thorough study by the Arizona legislature and the Arizona Industrial Commission, and there has been ample legislation covering this subject in our State mining code. Mine-dust control has become a highly effective operation in all the active mines of Arizona. One could say with authority that mine air in Arizona is relatively pure when compared with the air in the fields, desert areas, and on the highways of the State.

Records are kept by the Arizona Industrial Commission relative to compensatory cases. It is significant that in recent years the commission has not broken down into a separate classification silicosis as segregated from other occupational diseases. The figures in its report for 1952 showed that the mining industry in the State was responsible for 13 fatalities, but only one of these deaths was caused by silicosis.

In 1953 the report showed that 2 of the 16 fatalities in the mining industry in the State were from silicosis. The figures for 1952 and 1953 indicated that there was no special advantage in segregating hazards for silicosis from other occupational diseases, and since that time no separation has been made. The records of the Arizona Industrial Commission indicate that silicosis caused by miners' exposure to silica dust has almost disappeared, yet we are living and working in a State where one would expect dust on the lungs to be a major hazard. It would be unless everything possible were done, as is the case, to remove the cause.

Despite the fact that silicosis, as an occupational disease among mine employees, has now almost entirely disappeared as a result of its recognition and precautions taken, there have been some who have deliberately and maliciously built up a psychological fear that has resulted in the demands for special legislative consideration. No laws can be enacted that will eliminate imaginary hazards and the fear of their consequences.

Arizona, like other metal-mining States, has a very complete mining code written into law. It fully covers all known accident and health hazards, ventilation, dust control, and other phases. One of the major problems of the Arizona metal-mining companies is the policing which they have to provide to see to it that their own employees live up to the provisions of the State code.

Arizona, as well as all other metal-mining States, is close to and cognizant of the problems of health and safety of mine employees. The State quickly spots and recognizes any wavering of responsibility. However, with workmen's compensation rates as they are, it is simply

good business on the part of the mining companies to have well organized and efficient mine health and safety departments of their own. In our opinion, Federal inspection of the mines would in no way lessen the need of the State agencies already functioning and in fact, with such legislation as is proposed, would create a great area of confusion and conflict.

I wish to repeat that we oppose expansion of any Federal department to take over functions of government that are properly and logically those of the State. There is no problem existing that requires such bureaucratic expansion and, in our opinion, the objective reported to be sought is already being handled in an entirely satisfactory manner by the States and by those who are close to the problem and immediately concerned.

Mr. Chairman, just as a matter of interest, I have some pertinent information here, and you are welcome to glance at this and discard it or accumulate it or hang on to it if it will be of any benefit to you.

Mr. METCALF. We want to have any information that is available.

Mr. WOODBURN. This is the State mining code, and I have pamphlets on company procedures and so on.

Mr. METCALF. We have tried to accumulate for our files a collection of the various State mining codes, and we will be glad to have that.

Mr. WOODBURN. If that will be of benefit, that is fine.

Mr. METCALF. It will be received for the file and the staff will go over it and anything that is necessary to incorporate in the record will be incorporated in the printed record.

Mr. WOODBURN. Now, our facts and figures as to accident trends and so on, are given here. We make bold statements and some are backed up by very late statistics, and some statistics are incomplete and so on, and it is difficult. I think it is generally conceded that we are all headed in the right direction and except for minor setbacks the progress has been not all that is to be hoped for but we are very, very much gratified in the progress that we are making.

Now, just as one angle, the Joseph A. Holmes Safety Association puts out annual awards. It is an excellent idea. These awards are not easily come by. They are continuing. For instance, a company that has an 11-year and continuing record for no fatality for so many man-hours, and so many shifts, gets one award. That would not be one for each of the 11 years, so the thing does not tell a true story.

But glancing back through on 11 years of their annual reports that I happen to have in my files, I find that there were 686 awards made to metal mining. Now, I did not count all of those and in addition to that, there are many medals of honor and hero awards, and personal awards. But it is a tendency, and it does show something that we are very proud of. We have them framed around at our plants and it is something to be proud of.

Fortunately, 53 of these 686 that I counted in the 11 years here were in Arizona. We of Arizona like to feel that we were a part of acquiring those, and I just submit that. If you wish any of these, I have the last three reports, 1953, 1954, and 1955, and if you wish them you are welcome to them. If you do not want them you can discard them.

Mr. METCALF. We are very glad to have them.

Mr. WOODBURN. I just call your attention to these to show a general trend. There is nothing statistical in it, and it is just a record of accomplishment.

Mr. METCALF. We very much apreciate having that for the information of the committee.

Mr. WOODBURN. I want to thank the committee for the opportunity of appearing before you.

Mr. METCALF. Thank you, Mr. Woodburn, and now I am going to ask my colleague, from Arizona, to open the questioning and ask you questions if he has any.

Mr. RHODES. I want to thank you, Mr. Woodburn for your very fine statement, and for the information of the members of the committee Mr. Woodburn has been a resident of the State of Arizona for many years, and his name has become almost synonymous with mine safety on the private company level. I might also say, as a personal thought, his son lives in my home town, and he is a very good friend of mine.

Mr. Chairman, I have a letter from Mr. Edward Massey, the State mining inspector of the State of Arizona, and I would like to ask unanimous consent at this time to have that letter inserted immediately following Mr. Woodburn's statement in the record.

Mr. METCALF. Without objection, it will be so ordered.

(The information referred to follows:)

STATE MINE INSPECTOR,
Phoenix, Ariz., November 27, 1956.

Hon. JOHN RHODES,
Arizona Representative,
Washington, D. C.

DEAR MR. RHODES: I am writing you in protest of the bill which will come up in respect to the United States Bureau of Mines taking over metal-mine inspection in the States as they have done in coal mines. I cannot see why they want this job for which they are not acquainted with; every mine presents a different problem and must be handled differently whereas the coal mines are more or less uniform in that they are mined by 1 of 2 methods and the problems are the same in one mine as in the other. But in metal mines it is impossible to make a set of rules and have them apply to every metal mine.

I cannot see why the Bureau wants to socialize the mines so that one man could have the power to shut these mines down for reasons they saw fit. It is a dangerous thing when so much power is put in the hands of one man.

It would be impossible to make enough rules to apply to all the metal mines and have them carried out. I believe that in the organization of the Bureau of Mines that there are very few qualified men who know all the metal-mine problems.

We have plenty of brains in the metal-mine States to take care of our metal mines. Men who have followed this type of work all their lives, men who know how to correct any problem relating to metal mines immediately without having to go back to Washington and ask their chiefs for the answer or to have a new law passed that will cover it.

It seems mighty foolish to take the policing power of the States and turn it over to the Federal Government. This is something that could lead to other agencies being taken over by the Government.

Leave the Bureau of Mines their present duty of teaching mine rescue and first aid of which they do a lot of good, but also leave the States the power to police their own mines.

In closing I wish to state as mine inspector of Arizona that I am opposed to any law giving the Bureau of Mines authority over metal mines in the State of Arizona.

Yours truly,

EDWARD MASSEY,
Arizona State Mine Inspector.

Mr. RHODES. I have heard and I ask you to verify it or not verify it as you desire, that the companies in Arizona have followed the policy for years of taking their silicotics out from the underground operation and doing the best possible to give them jobs on the surface. Is that pretty much a policy as far as you know?

Mr. WOODBURN. I can speak for my own company. We have a very fortunate situation there. As I say, we are small enough that our men are known personally and many times it does not show any place and it is really not generally known, but I have known of a section boss, perhaps, that was not too well and getting a little old and his family was sick and the kids were not doing well, that suddenly went to the coast for a couple or 3 weeks. I know how that was taken care of. There is no record of it.

I do know that when a man, say one of our underground men gets rundown or gets to the point where he goes to the medical department for a lookover of any kind, the medical department will say, "Here, you had better take him away from his environment." So, they will put him on some other suitable work, and maybe he will go back to his job. I have known of men that have carried on sick intermittently for a matter of 3 or 4 years and I knew personally that their full pay went on just the same.

It is not a large item, and it is not a large thing. Those personalities enter into it a great deal. I am very happy to be associated with a group like that.

Mr. RHODES. I was interested very much in that part of your statement that had to do with the influence of the workmen's compensation law in Arizona. As you know, the workmen's compensation law in Arizona is probably as liberal as any law in the United States. I have often thought that it is undoubtedly true that the high level of compensation paid to the worker if he is disabled would have some effect on the desire of the company to keep him from getting disabled, and I think that your statement very definitely bore that out.

While we are pointing with pride, and thumping our chests a little bit, I might say that some of the other States involved in the mining situation might well look on an increase in workmen's compensation laws as a possible safety factor.

Mr. WOODBURN. It definitely is.

Just taking the business end of it, when we ring up on the cash register, we have to ring up a sale in the safety program or else the firm is not going to survive.

Mr. RHODES. I was also interested in your statement that probably the best air you breathe in Arizona, in the summertime at least, is the air which you breathe in the mines. We have had several abnormally dry years in the State, and there has been a dust problem in certain areas and probably some of our tuberculars should go to work in the mines instead of staying above ground.

Mr. METCALF. Will the gentleman yield?

Mr. Woodburn, up in Montana, in the mining area, there was a discovery of the possibility of uranium in between Butte and Helena. The uranium was not found to be commercially productive, but it was discovered that it might help for the cure of arthritis, and so we have a whole series of health mines. One of them was written up in Life magazine. Men and women sit in these uranium mines for arthritis

and rheumatism, and I would suggest perhaps that the members of the Arizona Mining Congress can open up some health mines in Arizona, and tubercular patients can sit around in those mines in the summertime in Arizona.

Mr. WOODBURN. It might pay some of us decripit old timers to take on a little tunnel some place, and rent it out.

Mr. RHODES. I might say to the gentleman from Montana that if all of the Montana people who are in Arizona for the winter were to sit in those mines, we would not have enough mines in Arizona to accommodate them. I do not think that I have any further questions, except to say again, that I am very pleased and proud to have another distinguished citizen of my State here to testify. Mr. Larson, the vice president of the Mine, Mill, and Smelter Workers, who testified yesterday, is also an Arizonan.

Mr. ELLIOTT. Mr. Woodburn, you say on page 9 of your statement:

> In our opinion, Federal inspection of the mines would in no way lessen the need of the State agencies already functioning—

And I agree with you in that statement.

> And, in fact, with such legislation as is proposed, would create a great area of confusion and conflict.

Now, I will say to you that in my judgment such has not been the case in the coal mines. I think the spirit of cooperation between the Federal mine inspectors and the State mine inspectors is right now perhaps at its highest peak, in the history of coal-mine inspection. I have had occasion recently to confer with some of the people involved in both groups.

Mr. WOODBURN. Pardon me, Mr. Elliott. I think in that I do not make myself quite clear. I am not worrying about the inspection so much as the complication of rules and regulations as they might be set up. I see your point exactly, and I agree with you heartily. There is no reason whether we have men coming in under compulsion or whether they come in as guests or whether they come in on business, we are happy to have them, and anything we can gain from them or they can get from us we are happy to have that.

I agree with you heartily.

Mr. ELLIOTT. The principal objection you have is in the possibility that a mining code might be prescribed that would not fit certain areas, particularly in the areas you speak for?

Mr. METCALF. Mr. Fjare.

Mr. FJARE. I was just looking at this chart, Mr. Woodburn. I notice in your testimony you represent the Arizona Small Mine Operaters Association, of which you say there are 3,000 members; is that right?

Mr. WOODBURN. Yes; prospectors on up.

Mr. FJARE. That is what I was going to ask next, whether that included prospectors.

How many mines are actually in existence, metal mines?

Mr. WOODBURN. I could not even make a guess at that.

Mr. FJARE. The reason I asked, I notice you had the figure 3,000 members that you said were engaged in both large and small mining activities.

Mr. WOODBURN. Not all the members are mine owners, but interested people in mining also.

Mr. FJARE. I am looking at the table which indicates the number of inspections made each year, 1953, 1954, 1955. Let us take the first one at the top. It says "Mines inspected in a 1-year period." That is 153, 179, and 197. What percentage of the existing mines do those figures represent, approximately?

Mr. WOODBURN. What percentage?

Mr. FJARE. Yes. Is that all of them? Or half of them?

Mr. WOODBURN. Oh, he has to inspect them all. In some of these, maybe the mines only lasted a week or a month or something. They were fly-by-night outfits.

Mr. FJARE. Regularly?

Mr. WOODBURN. Yes, he has to inspect quite regularly. And he rides herd pretty regularly on his small operators because they go native when they go out with lack of facilities, and they contribute a good deal to our accident records.

Mr. FJARE. Do the mine operators in Arizona use contract mining?

Mr. WOODBURN. Oh, to a certain extent. I think it had better be termed "bonus." In other words, incentive pay.

Mr. FJARE. Do you find under those circumstances, or does the industry realize under those circumstances, an increased accident rate where contract mining is used?

Mr. WOODBURN. No. We have been using it for many years.

Mr. FJARE. And you see no significant relationship between accident frequency under contract mining, as related to hourly rate?

Mr. WOODBURN. No. In fact, I think most of the men who have the better contracts, or bonus deals, are better men, and they are assigned to the more critical work, and they are respected and have individuality as craftsmen, and any request that they would have or any safety ideas that they would have would carry great weight. If they wanted it with a double gold ribbon around and an inlay of gold, and they thought it would be good and safe, it would be adhered to. Because we recognize them as being superior craftsmen.

Mr. FJARE. My reason, of course, for asking the question was in reference to our hearings at Butte, where it was indicated by testimony that miners mining under contract agreements had a tendency to be more careless. In other words, they were rushing, due to the bonus factors, that caused them on a personal basis to overlook normal safety practices.

Mr. WOODBURN. Well, you have to watch them for cutting corners, too, but also, they have additional inspections.

Mr. FJARE. They do in your setup?

Mr. WOODBURN. Yes. Because we have our engineers, contract engineers, as you call them, that are measuring everything and following the thing closely. And so they got a little more supervision.

Mr. FJARE. Then you would testify that there is no particular significance to increased accident rates due to contract mining?

Mr. WOODBURN. That is my opinion.

Mr. FJARE. That is all.

Mr. METCALF. Mr. Woodburn, I take it that you are in accord with the views of the Interior Department that you quoted?

Mr. WOODBURN. Yes. That is a confirmation of our general thesis.

Mr. METCALF. The report from Interior was made a part of the record immediately prior to the testimony of Mr. Johnson.

83066—56——32

Now, you don't feel that it is an invasion of States rights for the Bureau of Mines to perform the activities that it is presently performing.

Mr. WOODBURN. No, no; and we would like to have it increased.

Mr. METCALF. Now, have any of the mines that you are associated with refused entry to representatives of the Bureau of Mines?

Mr. WOODBURN. Oh, no, or anyone else; any interested party. Even if you are a legitimate interested tourist and came along, we wouldn't hide anything from you. We would give you a nice trip.

Mr. METCALF. I will say to my colleague, Mr. Rhodes, I am glad that some of our Montana people are going to get into the mines and out of the Arizona dust.

Mr. WOODBURN. We run a conducted tour twice a week that you can assign men to.

Mr. METCALF. Let me ask you this:

Has the Bureau of Mines ever failed or refused to cooperate with you in any safety program which you have requested them to help you with?

Mr. WOODBURN. Off the record.

(Discussion off the record.)

Mr. METCALF. I am sorry that that was off the record. Would you repeat the last sentence?

Mr. WOODBURN. I have an awfully short memory. I wouldn't say refusal.

Mr. METCALF. The only failure.

Mr. WOODBURN. Well, let's put it a little differently. I didn't bring my dictionary.

Well, they are hindered in answering all of our requests and desires, because of so many calls on their services that I call extracurricular.

Mr. METCALF. As a result of this hearing, we are all agreed that a showing has been made for a need for increased appropriations for the Bureau of Mines to conduct the present activities that are presently authorized, and we would like to have statements such as yours on the record to help us in presenting this matter to the Appropriations Committee.

Mr. WOODBURN. That is an existing organization that can be enlarged and is serving right along with our general scheme, and there would be no conflicts in any way if we had it.

Mr. METCALF. Now, suppose the representatives of the Public Health Service came in——

Mr. WOODBURN. We have had them.

Mr. METCALF. You would continue to cooperate with them?

Mr. WOODBURN. We would be very, very happy to. Some of the earliest ones, Dan Harrington and others, spent all 1 winter in 1 copper operation, I remember. That was back in the 1923's or 1924's probably.

Mr. FJARE. Most of the copper mines are open pit, are they not, in Arizona?

Mr. WOODBURN. Well, there is a trend that way. It is a very profitable way of handling large ore bodies in a wholesale way, much cheaper per ton than underground. But we still have, and are compelled to have, underground mines. Our big new mine, the San

Manuel Mining Co., over at San Manuel, Ariz., over toward Tucson, is a very large underground copper mine.

Mr. FJARE. How do you combat dust hazard in an open pit mine?

Mr. WOODBURN. Well, of course, we have to use water, which is quite a problem. We use lots of it. Ventilation is no problem, because we have lots of breeze. Mechanical means of filters, and so on. Just the normal procedures.

I don't think that there is any precedent established for silicosis hazards in our open pits in the short time that our State has been in it. We have only had one operation for any length of time, and that was Ajo for many years, the New Cornelia Co. over at Ajo.

In the last several years we have had several large ones, the 1 at Morenci, the Phelps Dodge plant there, 1 at Copper Cities, the 1 that was at Castle Dome, and now Inspiration is coming in.

Mr. METCALF. Thank you, Mr. Woodburn, for your testimony. We are glad to have had you here. You have made a real contribution to the work of the committee. We appreciate it.

Mr. WOODBURN. Thank you.

Mr. METCALF. The next witness is Mr. F. Cooper Green, assistant general manager of the Kennecott Copper Corp.

Mr. Green?

The members of the committee have a copy of your statement, Mr Green. You may proceed in any way you wish.

STATEMENT OF F. COOPER GREEN, ASSISTANT GENERAL MANAGER, UTAH DIVISION, KENNECOTT COPPER CORP.

Mr. GREEN. Chairman Metcalf and members of the committee, as you say, I am F. Cooper Green, assistant general manager of the Utah Copper division, Kennecott Copper Corp., Salt Lake City, Utah.

This company is engaged in the mining of a low-grade copper ore from its open pit mine in Bingham Canyon, Utah, beneficiating this ore through its mills at Arthur and Magna, and finally producing electrolytic copper shapes ready for the market, along with byproducts of gold, silver, molybdenum and selenium. The present mining rate is 90,000 tons of ore per day, and to free this ore it also is necessary to move in excess of 150,000 tons of waste daily; 6,600 employees are on the payroll of the mine, mills, and refinery.

If I may depart, Chairman Metcalf, from the text, at this moment, I will express my thanks to you and to your committee for allowing me to come here to represent my company, and since my statement here is merely an opinion of this company and therefore limited in its help to you, I am going to make it very brief and very short.

I would like to say two things to you:

First, the interest of health and safety of our company's employees, I think I can safely say, is the No. 1 concern of management. Our president has many, many times said that a poor safety record is an indication of a poor manager. And I can think of no shorter words that would enforce on a manager his interest in safety. So it is the No. 1 problem with our company, and we have a large staff continually working on improvement of safety and health conditions.

The second thing that I would like to say to you, departing from text, is that the real purpose I am here is to express to you the opinion of the company on the question of further expansion of investigations.

Now, certainly, to answer the questions that you have asked here this morning, our company would have no objection to the Bureau of Mines coming into our operations. In fact, I have personally conducted many of the Bureau of Mines people through our operations.

But the company feels that it would be a useless expenditure of further funds to expand a facility which already exists, in our opinion, to a fine degree of perfection in the State inspection and control by the commission of health and safety of the conditions of our employees.

And my statement here is merely a short one to introduce into the record our safety record for our company.

It is not my purpose to burden the record with statistics, because those statistics are very available to this committee, but to submit a few figures which will indicate the measure of success the company has attained in the control of the health, safety, and welfare of its employees.

While the figures presented are those of its Utah division, the same general trend exists in its operations in Nevada, New Mexico, and Arizona. Operating under the supervision of the Utah State Industrial Commission, the Utah division feels that its health and safety record is one of which it can be justly proud.

We feel this record has been achieved in an atmosphere of mutual understanding and respect between the commission, the company, and the unions concerned. The commission has always used every facility available to it, including consultation with union leaders, and often the Bureau of Mines as well as other Government agencies.

Health and safety at Kennecott is a first consideration of management. In order to insure that this will be true, the director of health and safety at each of the company's western divisions is a staff official of high rank who maintains an organization reporting to him, and he in turn reports directly to the division general manager rather than to the individual plant superintendents. The company maintains an active department of industrial hygiene which is responsible for sampling, analysis, and design, devoted to the control of dust and gases.

I am submitting for the record tabulations showing accident statistics for the last 10 years. These include individual reports for the pit and for each of the surface facilities.

In summary for the entire division, the frequency rate for 1955 was 4.42. This measuring statistic has shown a steady decline year by year.

In addition, the division has received several Joseph A. Holmes awards.

Such a record indicates clearly what is being done through close cooperation between the company, the State commission, and the unions representing its employees.

And if I may just conclude, Mr. Metcalf, by one illustration of a recent happening which would clearly illustrate to you the manner in which the commission and the company and its unions work:

As early as a year ago, we suffered a fatality, which is something regrettable to all of us, by a cave-in on one of our shovel cabs. At that time there were 40 such shovels operating in the pit, and a few, about 14 at that time, were of older models of shovels, that had single controls, and therefore it was necessary at times for the operator to work against the bank. And this cave-in happened when he was working

with his control against the bank. Had he been on the other side of the bank, with a dual-control shovel, he would not have lost his life.

Of course, immediately following the accident, the State mine inspector—and that is one of the advantages—was on the job before the man was removed from his cab. And immediately the union involved, the operating engineers—their representatives were called on the scene, and following the investigation it appeared quite evident to all of us that the State mine inspector was inclined to, and felt he should, issue an order to the company to cease working those shovels with the operator against the bank.

Well, that was quite a handicap to the operation, because it is quite evident to the committee that at times working on those banks, the shovels have to go in a direction in which the operator would be against the bank. So it was a handicap.

But the company, without waiting for the instruction of the State mine inspector—because it had the opinion of the unions involved, and felt that it should cease that method of operation—issued a ruling immediately that all work with the shovel operators against the bank would cease, in spite of the handicap to operations. The further corrective measure, of course, is a campaign to convert those shovels to dual controls as rapidly as possible, which is being done.

I merely cite that into the record to illustrate the manner in which the cooperation between the commission, the unions, and the company functions in Utah.

Mr. METCALF. Now, you have some tables that were a part of your statement, and they will be incorporated immediately following your statement in the record.

I notice that you referred to the division. That is the Utah Copper Division?

Mr. GREEN. The Utah Copper Division of Kennecott Copper; yes.

Mr. METCALF. And various tables are then broken down.

Mr. GREEN. The first table there, Mr. Chairman, is the complete summary record of the entire division. Then follows the mine and the two mills and the refinery.

Mr. METCALF. The first table is a summary of the compilation?

Mr. GREEN. Of the whole division; yes. And I might further point out that that record is well below the average of all industries, and considerably below the average of mining facilities.

Mr. METCALF. The table will be included in the record as suggested.

Mr. Elliott?

Mr. ELLIOTT. No questions.

Mr. METCALF. Mr. Rhodes?

Mr. RHODES. I have no questions.

Mr. METCALF. I have no questions either, and thank you, Mr. Green, for your testimony, and for bringing to us another phase from another State of actual operations of mining safety and mining operations in the field.

Mr. GREEN. Thank you, Mr. Chairman.

(The material referred to follows:)

Kennecott Copper Corp., Utah Copper division—General accident statistics, 10-year analysis ending 1955

TOTAL DIVISION

Year	Number of accidents					Day charges				Man-hours worked	Rates	
	Fatal	Permanent partial	Temporary total	No lost time	Total	Fatal	Permanent partial	Temporary total	Total days lost		Frequency	Severity
1946	1	5	28	1,557	1,591	6,000	7,402	1,345	14,747	5,652,024	6.02	2,600
1947	3	8	74	3,294	3,379	18,000	6,173	3,565	27,738	10,373,520	8.19	2,670
1948	11	17	57	2,101	2,186	66,000	5,355	3,387	74,742	9,692,692	8.77	7,710
1949	1	6	50	1,891	1,948	6,000	8,532	2,131	16,663	9,125,953	6.25	1,820
1950	5	6	60	3,022	3,093	30,000	1,243	1,975	33,218	11,604,928	6.12	2,862
1951	4	5	93	3,063	3,165	24,000	2,136	1,530	27,666	12,796,984	7.95	1,610
1952	1	3	58	2,452	2,514	6,000	1,055	1,449	8,504	13,563,471	4.57	626
1953	4	5	36	1,967	2,012	24,000	1,845	935	26,780	13,769,784	3.27	1,944
1954	4	2	57	1,506	1,569	24,000	975	1,878	26,853	10,898,832	5.78	2,460
1955	1	12	40	2,187	2,240	6,000	11,060	1,276	18,336	11,986,080	4.42	1,530

MINES PLANT

1946	1	1	16	359	377	6,000	252	369	6,621	2,568,184	7.0	2,500
1947	3	5	51	903	962	18,000	3,273	2,581	23,818	5,386,648	10.9	4,400
1948	8	9	37	651	705	48,000	3,640	2,104	53,744	4,847,424	11.1	11,100
1949	1	2	32	569	604	6,000	105	1,103	7,208	4,390,424	7.8	1,600
1950	2	4	33	797	836	12,000	1,043	1,067	14,460	5,480,816	7.1	2,638
1951	3	1	34	712	750	18,000	1,800	614	20,414	5,504,792	6.9	3,700
1952	0	2	35	906	943	0	1,020	1,070	2,090	5,980,688	6.2	300
1953	4	1	21	837	863	24,000	600	563	25,163	6,015,576	4.3	4,200
1954	2	0	34	622	658	12,000	0	1,474	13,474	4,769,176	7.5	2,800
1955	1	6	19	725	751	6,000	10,650	661	17,311	5,580,240	4.7	3,100

MAGNA MILL

1946	0	1	6	392	399	0	750	563	1,313	1,440,760	4.86	910
1947	0	2	12	893	907	0	2,800	557	3,357	2,437,616	5.74	1,380
1948	3	5	11	479	498	18,000	1,315	680	19,995	2,389,012	7.95	8,370
1949	0	3	10	485	498	0	6,577	651	7,229	2,318,024	5.61	3,120
1950	2	1	11	551	565	12,000	100	496	12,596	2,775,888	5.04	4,540
1951	0	0	11	460	471	0	0	197	197	2,768,104	3.97	70
1952	1	0	14	506	421	6,000	0	201	6,201	2,889,616	5.19	2,150
1953	0	1	3	373	377	0	150	57	207	2,920,152	1.37	70
1954	2	1	8	309	320	12,000	900	145	13,045	2,253,624	4.88	5,790
1955	0	2	7	638	647	0	160	103	263	2,330,952	3.86	113

ARTHUR MILL

1946	0	3	6	806	815	0	6,400	413	6,813	1,103,080	8.16	6,180
1947	0	1	11	1,498	1,510	0	100	427	527	2,009,256	5.97	260
1948	0	3	9	971	983	0	400	603	1,003	1,916,256	6.26	520
1949	0	1	8	837	846	0	1,850	377	2,227	1,877,515	4.79	1,190
1950	0	1	11	935	947	0	100	387	487	2,265,648	5.30	210
1951	0	0	9	589	598	0	0	180	180	2,329,968	3.86	80
1952	0	0	6	301	307	0	0	157	157	2,431,360	2.47	60
1953	0	1	4	209	214	0	150	28	178	2,507,528	1.99	70
1954	0	0	3	174	177	0	0	52	52	1,857,168	1.62	30
1955	0	2	7	378	387	0	210	206	416	1,840,864	4.89	230

UTAH REFINERY—6-YEAR ANALYSIS ENDING 1955

1950	1	0	5	733	739	6,000	0	2.5	6,025.5	542,576	11.06	1,111
1951	1	4	39	1,302	1,346	6,000	336	539	6,875	1,654,120	26.60	4,160
1952	0	1	3	739	743	0	35	21	56	1,721,808	2.32	33
1953	0	2	8	548	558	0	945	287	1,232	1,786,528	5.60	665
1954	0	1	12	401	414	0	75	207	282	1,564,136	8.31	180
1955	0	2	7	446	455	0	40	306	346	1,638,200	5.49	211

Mr. METCALF. The next witness will be Mr. Miles P. Romney of the Utah Mining Association.

Mr. Romney?

It is a pleasure to have you here before us.

STATEMENT OF MILES P. ROMNEY, MANAGER, UTAH MINING ASSOCIATION

Mr. ROMNEY. Thank you very kindly, Chairman Metcalf.

Mr. Chairman and members of the committee, I am Miles P. Romney, manager of the Utah Mining Association. Our association membership includes the major portion of the metal producers of Utah from both underground and quarrying operations—which includes open-pit operations—as well as a substantial portion of the metallic and nonmetallic mines and quarries by the United States Bureau of Mines or any other Federal agency by the United States Bureau to state their reasons for such opposition.

Mining is of great economic importance to Utah and its welfare is of vital concern. Health and safety in mining operations hold an important role in the industry and are, therefore, matters of grave concern to all groups interested in or affected by mining in Utah, including labor, management, and government.

Through strong interest and through the cooperative effort of those concerned, an effective, efficient, and prompt State administration of such matters has been attained. Labor, management, and State government have cooperated in all phases. A brief sketch of health and safety administration in Utah will illustrate.

The Utah State Industrial Commission was established by State law with broad powers in the formulation of codes and standards, of rules and regulations, and in inspections and enforcements for all places of employment in Utah. Its powers in those fields are restricted only by the requirement that such actions be "reasonable."

Reasonableness is subject to court review by any aggrieved party. In the 37 years of operation under those powers, the commission has never been faced with a suit concerning the reasonableness of rules, regulations, or enforcements.

In the formulation of health and safety codes, the commission has followed the practice of appointing committees of equal representation from labor and from management of the industry involved. The committee does the actual work of code formulation and passes its completed recommendations to the commission.

The powers of the Utah State Industrial Commission, and the method used for establishing its general orders, are related in the present general safety orders covering mines. I quote from page 13 of those orders.

I would like, Mr. Chairman, to leave a copy of the State code with you for your files for further study.

Chairman METCALF. We will be very glad to have it for the completion of our files. It will be inserted in the files.

Mr. ROMNEY. We will skip the particular identifying positions of the quotations.

Powers and duties of the commission: The law states it shall be the duty of the commission, and it shall have full power, jurisdiction, and authority:

1. To supervise every employment and place of employment and to administer and enforce all laws for the protection of life, health, safety, and welfare of employees.

2. To ascertain and fix such reasonable standards, and prescribe, modify, and enforce such reasonable orders, for the adoption of safety devices, safeguards, and other means and methods of protection, to be as nearly uniform as possible, as may be necessary to carry out all laws and lawful orders relative to the protection of the life, health, safety, and welfare of employees in employment and places of employment.

3. To ascertain, fix, and order such reasonable standards for the construction, repair, and maintenance of places of employment as shall render them safe.

7. To collect, collate, and publish statistical and other information relating to employees, employers, employments, and places of employment and such other statistics as it may deem proper.

The commission has added this note, which is contained in the booklet handed to you:

In conformity with the above provisions, the Industrial Commission of Utah did, after advising with representatives of the employers and of the employees, prepare and adopt what is known as general safety orders covering underground metal mining operations. Said code became effective August 15, 1919, and was in effect from that date up to May 1931. The Industrial Commission of Utah again deemed it advisable to amend the general safety orders hereinabove referred to and in contemplation of said revision did appoint a committee to revise the above-mentioned orders.

On July 1, 1931, the Industrial Commission, by Resolution No. 1095, adopted the report of the above committee, which report was embraced in the general safety orders covering underground metal mining operations that became effective as of August 1, 1931. After consulting with representatives of the employers and employees, the industrial commission again deemed it advisable to amend the general safety orders herein referred to and on November 21, 1944, did appoint the following-named committee to study the existing orders and propose amendments thereto:

J. H. Bird, United States Bureau of Mines; H. D. Paine, Tintic Standard Mining Co.; B. L. Sackett, International Smelting & Refining Co.; Oscar A. Glaeser, United States Smelting & Refining and Mining Co.; H. L. Garrity, Utah Copper Mining Co.; J. Frank Marble, District No. 2, Mine, Mill, and Smelter Workers; Kimble Kane, Lark Local 91; Don D. Hansen, Local 331, International Union of Mine, Mill, and Smelter Workers; Ernest Stanton, Local No. 3, International Union of Operating Engineers; due to the fact that Mr. Marble could not attend all the meetings he was represented by C. E. Cockayne, Con Keith, or George Naylor; Charles W. Spence, chief metal mine inspector, industrial commission, and Victor G. Pett, deputy metal mine inspector, industrial commission, who was selected by the committee to act as chairman.

This committee met at various times and made a careful study of the existing safety standards and prepared and submitted to the industrial commission a revision of said orders, with the recommendation that same be adopted, effective as of July 1, 1945. On April 16, 1945, the Industrial Commission of Utah, by motion No. 15971, adopted the report of the above-named committee, which report is embraced in the following orders:

I have repeated this for emphasis to illustrate the methods that have been used in the State of Utah.

Rules and regulations implementing the general-safety codes may be issued by the commission without the necessity of public hearings. However, on matters threatening controversy or misunderstanding, a process similar to code formulation is followed, in that affected parties are consulted extensively before the rule or regulation is issued.

A recent example is referred to.

Uranium mining is relatively new in Utah. The State industrial commission chairman became concerned with the possible impairment

of workers' health through exposure to radon gas and its disintegration products. Very little clinical data was available on which to base standards, rules, or regulations.

The commission, therefore, arranged a series of meetings in 1955 to explore the problem. Those best informed were invited to attend, including officials from the United States Public Health Service, Atomic Energy Commission, United States Bureau of Mines, mine operators, State public-health and mine-safety officials, and other interested parties. Individuals having specific knowledge on each phase of the problem presented information and led discussions.

After several such cooperative sessions the industrial commission issued an order covering ventilation of mines, gas-concentration limits, checking and inspection procedures. Copies of that order and information related to compliance were sent to all mine operators. In this example, a new problem was recognized by State authorities responsible for health and safety. All interested parties contributed to the studies and recommendations for its solution and the same groups are now cooperating in its application and enforcement.

Appended to the back of my statement are three sheets, the first of which are the specific orders of the commission; the second of which is a description of equipment which was available to carry out the orders of the commission by way of testing.

The Public Health Service had tested and approved each item of equipment so listed.

The third sheet is a sheet of suggestions on information on how to use this equipment, which was prepared for us by the Public Health Service and distributed to the mine operations.

Opposition of the Utah mine operators to Federal inspections and investigations is not directed at such activities, as such. But opposition is directed at the proposal that such activities be conducted under Federal rather than State jurisdiction.

We favor continued and increased cooperation between the responsible State administration and the Federal departments active in health and safety fields.

If I might insert something into the record here, I was interested in picking up, just yesterday, a publication by the United States Department of Labor entitled "Safety Standards," issued for July and August 1956. If I may insert this into the record, on page 1 of that publication, it quotes President Eisenhower very significantly on this specific subject.

In speaking to this group, he stated:

> Outlining responsibility for the control of work accidents, President Eisenhower declared the Federal Government's part here is limited very definitely to that of general leadership. Federal law and Federal Government should not extend into the factory, into the farm, and into other places where these accidents occur. The community and the State, therefore, must pick up the burden of teaching, of devising, of planning, so that this tragedy is certainly lessened in extent and comes as close to the point of elimination as human ingenuity can bring it.

May I submit this for the record?

Mr. ELLIOTT. What is the publication, sir?

Mr. ROMENY. The publication is entitled "Safety Standards." It is published by the United States Bureau of Labor. It was published to cover the period of July and August 1956. It reports the President's

Conference on Occupational Safety held in Washington, D. C., on May 14 to 16, 1956. The quotation read is a direct quotation from President Eisenhower.

The elements necessary to an adequate and effective mine health and safety program are present within State boundaries. The intelligence and experience concerning such matters and the desire to attain practical objectives are present on the site of operations so to speak, including all affected parties, in the persons of labor, management, and the public as represented by government.

There is no basic reason why the combination of those abilities and parties cannot integrate, under State jurisdiction, a completely adequate and effective program involving inspections, investigations, formulation of codes, rules and regulations, and enforcement.

The premise of our opposition to the proposed legislation is that, in Utah, we have utilized those talents, coordinated the efforts and knowledge of interested parties and established an effective health and safety program, not only for mines but for all industry. We feel that we are doing better under "home rule" than could be expected from "absentee rule."

Problems of local nature or of sudden impact can and are being solved by prompt and fully considered action. The case of radon gas cited above is but one example.

Another facet of State and Federal relationship in matters of health and safety justifies comment. The United States Bureau of Mines and the United States Public Health Service have offices and competent staffs in Utah. Their consultation and cooperation has been requested and appreciatively utilized in the solution of our State's problems.

Much preliminary survey and analysis work was done by the Public Health Service in the radon gas problem. The Bureau of Mines was also consulted.

The Bureau of Mines was invited into recent conferences between mine operators and the State industrial commission on the problem of safety in the process of pillar recovery in underground mines.

There are several study projects now in progress, some instigated by the State industrial commission and some by mine management, in which the Public Health Service and the Bureau of Mines are cooperating.

I should have added after "cooperating" there, "with the industrial commission and with management in Utah."

In other words, the knowledge of these Federal departments is at present being utilized to solve existing problems and to investigate the nature of anticipated health and safety hazards, but it is being done under State jurisdiction and in cooperation with the other interested parties.

I am sure that if either the United States Public Health Service or the United States Bureau of Mines, or any other Federal agency, should call the attention of our State industrial commission to an unrecognized existing hazard, or to a nonexistent but threatened hazard, prompt and cooperative action would be taken to cope with it.

Statistics are dull and boring, but I would like to present just a few statistical facts as a measure of our general industrial and mine safety in Utah.

I am going to apologize here for not having complete records of the State. My notice of these hearings was so late that I didn't get the

opportunity to get them. They are available. I checked with our State industrial commissioner, and we have statistics completed up to July 1, 1956. And I would be pleased, with your permission, to prepare some additional information covering the State and send it to you prior to the date noted to a previous witness.

Mr. METCALF. We will be very glad to have that additional information, and unless there is objection, it will be inserted in the record immediately after its receipt.

(The additional information referred to appears at the close of witness' testimony.)

Mr. ROMNEY. This refers to a major underground mining operation in Utah, on which data could be obtained, boasts a 72-percent reduction in frequency over a 20-year period. Specifically, the average frequency rate for 1951–55 was but 28.2 percent of the rate for 1935–39. This despite the introduction of much high-powered mechanized equipment during the same period.

In another operation which includes a flotation mill and smelter, the 1951–55 average frequency rate was but 26.2 percent of the rate for 1935–39.

Both of these operations have received several Joseph A. Holmes safety awards for outstanding safety accomplishments in the period 1941 to 1954.

I believe you have a record on New Park Mining Co. which shows frequency rates there, which show a rather marked decrease over the years reported.

In conclusion, we again express the conviction that Utah's present administration of health and safety in metallic and nonmetallic mines and quarries provides effective, efficient, and prompt regulation, control, and improvement. We therefore oppose legislation which would reduce State jurisdiction in those matters.

On the other hand, we welcome and encourage cooperation with the Bureau of Mines, Public Health Service, or any other department or agency, either public or private in nature. Such cooperation with the State industrial commission, with mine management, and with labor in the joint efforts of these three groups would stimulate the present efforts of these three groups to provide the best possible health and safety conditions in Utah's mining activities.

That completes my prepared statement, sir.

Mr. METCALF. I am not sure whether I have kept the record straight, but these three additions to your testimony that you mentioned will immediately follow your oral presentation, and the matter that you wished inserted in the record—did you just wish the quote put in the record?

Mr. ROMNEY. Well, I presume the quote and proper identification of the source of the information is all that needs to go in the record.

Mr. METCALF. Then the rest of the document will be kept in the file for the information of the committee.

Mr. ROMNEY. I think I am giving somebody else's book away.

Mr. METCALF. We will replace it and return it to you. All that will be inserted in the record is the quote that you read.

Mr. Rhodes?

Mr. RHODES. What are the properties of radon gas? Is it a toxic gas, or radioactive? In what way does it affect a person?

Mr. ROMNEY. I am a layman in the matter, and I will attempt to explain it to you the best I can.

It has radioactive effects, and its anticipated effect is producing cancer of the lung. There has been very little clinical evidence assembled on it. There was some information developed in certain mines in Europe in which radioactive elements were present. However, there were a number of very unusual circumstances related to both the mines and the conditions under which employees were living. That suggested some rather high incidence over there, in those cases.

The medical authorities and the Atomic Energy Commission, the Bureau of Mines, the Public Health Service, some of those connected with Saranac Lake, in our study of this problem in Utah, felt that there simply was not adequate clinical evidence to pin any incidence of cancer of the lung to exposure to radon gas.

However, it was due to the thought of there being a possibility there that we all cooperated in Utah with the industrial commission in their suggestion that the area be explored, and that standards be set up on the basis of best judgment from those studies, and the deliberations of those who attended those meetings, from the protection of workers.

Then, naturally, that will have to be followed up with any clinical evidence that develops in the research that is going on at the present time on the matter.

Mr. RHODES. The figure of concentration of 300 MMCL is more or less an educated guess?

Mr. ROMNEY. It is an educated guess, and admittedly so by all parties concerned. And that 300 MMCL refers to the disintegration products of radon rather than to radon itself. The radon itself is not particularly harmful. It is the disintegration products which are suspect in the matter.

Mr. RHODES. I presume there is a continuing study going on, both by the Utah Industrial Commission and probably the Bureau of Mines.

Mr. ROMNEY. Well, the Bureau of Mines and the Public Health Service. We have a gentleman by the name of Dr. Duncan Halliday, who is in charge of the field service there, and he is continually exploring this field, both in collecting information and doing what research he can himself.

Mr. METCALF. Mr. Romney, I was intrigued by the quote that we have previously discussed, assuming it was from Secretary Mitchell.

You know, this business of introduction of bills is rather a probing process. We put these bills in to find out whether they will help to solve the specific problem or not.

Early in 1955, at the beginning of this session of Congress, I put in a bill providing for Federal assistance to the States for compensation payments for silicosis. Again, that was just an attempt to find out whether maybe that would be a solution to the problem.

Now, what do you think of that sort of an approach?

That was the approach that that quote might take, to help in the subsidy payments to help the State.

Mr. ROMNEY. It is something that needs to be explored.

My personal feeling is that the State should bear every bit of responsibility under those circumstances that is possible. It applies to this thing. It applies to aid to the industrial commission.

Another bill was introduced along that line. It applied to the matter of Federal aid to education. There are a lot of facets to be considered in the thing.

I think, basically, the interest of those bills is to stimulate adequate provision for these problems. And I feel personally that the most equitable solution, and that which permits the greatest pride in its accomplishment and the best control of its continuation, is on the local level.

Maybe sometimes we don't get it, and we have got to go to further steps. And it is my personal feeling that in these things we should take care of just as much as is humanly possible on the local level.

But your idea of exploring it, the introduction of bills, certainly is a basic part of our legislative process. That is the way we get the views of parties with various interests and viewpoints and activities.

Mr. METCALF. Even though I am the sponsor of that legislation, I am not sure whether that is the right approach. And that is why we hold hearings such as this, in order to get information from authoritative sources.

But I wanted to point out that the same source that you quoted in opposition to this type of legislation that is before us, H. R. 9269, and so forth—the Secretary of Labor has suggested that in President Eisenhower's occupational safety program, perhaps some grants to the States would be an approach. And I have such an approach for silicosis in H. R. 2622, and I was wondering what your attitude would be toward that approach.

Mr. ROMNEY. Well, my experience, of course, has been largely in the State of Utah. Our compensation law provisions are constantly under survey in the State of Utah.

In the session 2 years ago, compensation adjustments were made. Each time that comes up, we have followed that practice there of again appointing a committee of equal representation, and the legislature has more or less adopted the precedent of not acting on any measures of that type unless there were agreed bills from such a committee.

Certainly those things should be reexamined all the time, but our attitude has been that they should be considered by jointly representative groups, and that the rest of us would follow the recommendations made by that group.

Now, I think that so far as the State of Utah is concerned, we are in a position, and have such an attitude, to take care of those things without the need of additional funds from Federal sources. Other States may not have, and may feel differently about it.

So as I say, I can express a personal viewpoint as related to our Utah situation, with which I am acquainted.

Mr. METCALF. Senator Murray has introduced a companion bill to my H. R. 2622 in the Senate, and in the report on this legislation on which this committee is holding hearings, to the Senate Committee on Labor and Public Welfare, Secretary Mitchell of the Department of Labor did make a comment on the companion legislation. He said that:

> Inasmuch as the accident record for metallic and nonmetallic mines and quarries is high, there is obviously a great need for an effective accident prevention program.

And then he continued, that, however, he did not believe that the Senate bill, S. 3097, provides the most effective means. And then Secretary Mitchell said that S. 1091, the companion bill to 2622, a bill introduced during the last session of Congress, would carry out President Eisenhower's recommendation for occupational safety legislation.

This bill provides for grants to the States which enable them to develop more extensive and more effective accident prevention programs in many industries, including metallic and nonmetallic mines and quarries.

That is the end of the quote from Mr. Mitchell.

I want to point out that, despite the fact that we have adverse administrative reports on this specific legislation, we have a recommendation from the President and from the Department of Labor that some legislation should be enacted to alleviate the high accident rate in metallic and nonmetallic mines and quarries.

Mr. ROMNEY. I appreciate that. And this reference that I read from the President was related specifically to my point on the State retaining jurisdiction.

Mr. METCALF. I understand; yes.

Mr. ROMNEY. And I have appreciated the fact that those bills were in or had been considered, and that there had been support behind the grant idea, to both State control bodies and to compensation channels.

Mr. METCALF. I think that is all.

Mr. RHODES. May I ask a question?

Mr. METCALF. Surely.

Mr. RHODES. Mr. Romney, I think it is pretty much the situation that when the Federal Government enters a new field of endeavor, it does so for one of two reasons.

One is that a need exists which the States just cannot fulfill. I suppose you might say your Federal road-building program could come into that category.

Another reason would be where a need exists which the States probably can fulfill, but for some reason or other are not, and the Federal Government enters the field more or less on the basis of getting the thing off the ground, so that the States will take over.

I think maybe your vocational education and vocational rehabilitation of the handicapped might come under that latter category.

But as I gather, it is your opinion that in this particular instance the States can and will meet the responsibility which is required to have better mine safety programs.

Is that pretty much the situation?

Mr. ROMNEY. That generally is true. I am frank to admit to this committee that I was a little shocked here this morning to hear that there had been a refusal in a certain area for entree of Bureau of Mines and perhaps Public Health officials into a mine for examination and for the obtaining of information.

It is extremely regrettable. I would feel, and in fact my experience has been so much the other way, that it is a little shocking for me to hear that there had been any such case.

I would hope that such cases are exceptional in occurrence. Even in view of such a refusal, I am not prepared to admit that maybe the first thing we ought to do is to change the law to make entree mandatory. There are probably other channels.

Maybe industry itself has been remiss to some extent in its overall educational program, although as Mr. Schwab recited to you, the spreading of information, the sharing of information, is well advanced.

In Utah we have a State Industrial Council of Safety Engineers, and they meet once a month and discuss among themselves the progress that they are making, their experiences, and one thing and another.

But I certainly think that every effort should be made through public education and through industry pressure to bring any such area into line. Because I would like to see the Bureau of Mines activities in these fields, which we have found so useful and beneficial in Utah, I would like to see them expanded.

The same thing for the Public Health Service.

But whether or not it is to a point that we should change our whole jurisdictional procedure—and I recognize that this law does not propose it. But as you were reciting the CIO official statement here the other day, certainly that is what they were aiming for, and certainly the precedent in the coal mining situation was that.

We had a coal mine bill like this in 1941, and the Federal inspection bill in 1952. It is the foot-in-the-door situation that we are worrying about, rather than what might result specifically from this move right now if that were assured to be the terminal move in the situation.

But I believe that we have got to jointly explore the possibilities of bringing pressure and education to those people to make it possible for the Bureau of Mines to go in and to see their operation.

If I might say one other thing, on the matter of statistics: I think that again the Bureau is handicapped in personnel and facilities, and possibly in the development of methods that could effectively gather statistics, simply because of the fact of appropriations being inadequate.

Now, I talked to our State industrial commissioner just a day or so before I left, and found that our statistics were up to date, up to January 1 of 1956.

Now, maybe they are not in the form that the Bureau of Mines would like to have them. It is possible that if the Bureau of Mines went in to get those figures, they would have to completely revise them to get the data in the way that they want it. But the information is available.

And I believe that with additional funds, additional personnel, organization of their statistical gathering procedures, so that that information would come directly back here rather than be tangled up with tonnage and production figures, and that sort of thing, the Bureau of Mines could do a much more effective job in statistics.

Those are things I think we should all work toward. And I think it is wonderful to get together here and discuss them and express our views.

Mr. RHODES. Then you feel that the Bureau of Mines definitely has a function so far as education and research, data collection, and other matters related to that would be concerned?

Mr. ROMNEY. We have found it very helpful, and would like to see it enlarged.

Mr. RHODES. And acting in an advisory capacity to the industry and the unions.

Do you think that there is any possibility that the mining industry could develop some sort of an institute, financed either by the companies or by the companies and the unions, to take over part of this function of collection of data and exploration of new methods for safer operations?

Mr. ROMNEY. Well, I think that it is being done much more strongly in the field of development and dissemination of information than on a statistical basis.

Numerous instances have been cited of industry's cooperation and of the meeting of those responsible for the mechanics of compliance, and of those in the research end, of their getting together and discussing developments and exchanging information and experiences and ideas.

There is a great deal more being done along that line than along statistical lines.

Now, we have the National Safety Council, to which most of us, or a lot of us, subscribe, and they collect data. I think their data is probably a little more up to date than Bureau of Mines data is.

What the complications would be to an industry program of taking responsibility for getting that material together and passing it on is a little difficult to appraise.

I am inclined to believe that you might have some of the people who were inclined to drag their heels in any group, and it would be the same with an industry group.

Mr. METCALF. Thank you, Mr. Romney.

Again, we always like to get together and talk about these things, and this is one of those exploratory subjects that this committee is engaged upon. We are every appreciative of your testimony.

Mr. ROMNEY. Thank you very much.

(Supplemental information referred to follows:)

UTAH MINING ASSOCIATION,
Salt Lake City, Utah, December 14, 1956.

Hon. LEE METCALF,
Chairman, Special Subcommittee, Mining Safety,
House Office Building, Washington, D. C.

DEAR MR. METCALF AND MEMBERS OF THE SUBCOMMITTEE: Subsequent to testifying before your committee on December 5, 1956, in behalf of the Utah Mining Association, I have compiled statistics on the safety record of Utah metal mines for the period of 1947–55, inclusive. The data was taken from the records of the Utah State Industrial Commission. Those records do not carry frequency and severity calculations. However, I have used for purposes of comparison the average number of employees per month as reported by the Utah Department of Employment Security. The accident record as shown below, I believe, is self-explanatory. It shows a marked decrease in nonfatal accidents and improvement in the number of fatal accidents, as well as improvement in the number of fatal accidents in relationship to the increase in employment over the years.

The metal-mining industry and the industrial commission will continue to direct their efforts toward reducing both nonfatal and fatal accidents to the vanishing point.

Thanking you again for the opportunity to appear personally before your committee and trusting that this information will be of use to you, I am,

Very truly yours,

MILES P. ROMNEY, *Manager.*

Utah metal mine safety record, 1947–55—Data from Utah State Industrial Commission

Year	Employees, average number per month	Nonfatal accidents				Fatal accidents
		Underground	Surface	Open cut	Total nonfatal	
1945						
1946						
1947	7,677	1,204	193	83	1,480	12
1948	7,302	(1)	(1)	(1)	[2] 1,575	18
1949	7,322	737	543	43	1,323	6
1950	7,311	708	353	101	1,162	19
1951	8,136	754	464	37	1,255	13
1952	8,251	519	262	28	809	11
1953	8,191	254	283		537	12
1954	8,299	240	253		493	10
1955	9,429	200	239		439	9

[1] Breakdown not available.
[2] Not including May.

Mr. METCALF. I have a statement of Mr. A. H. Shoemaker of Lead, S. Dak., general manager of Homestake Mining Co., which will be inserted at this point in the record as if read.

STATEMENT OF A. H. SHOEMAKER, LEAD, S. DAK., GENERAL MANAGER, HOMESTAKE MINING CO.

Mr. SHOEMAKER. I am A. H. Shoemaker, of Lead, S. Dak., general manager of Homestake Mining Co., the largest gold producer in the Western Hemisphere.

We respectfully present to you the following comments regarding the identical bills, H. R. 9269 and H. R. 9343, which seek to empower the Bureau of Mines to make annual investigations, inspections, and recommendations with respect to mine safety in the metallic and nonmetallic mines of the country.

The Homestake Mine has been an operating property since the year 1877. Presently we employ approximately 1,800 men. We have had a safety program in our mine for nearly half a century.

We regularly employ three full-time safety engineers who constantly devote their time and energy toward the improvement of working conditions and safety. We have an employee safety suggestion program with awards to the winners.

We have a well-integrated safety committee system, with a central safety committee composed of the general manager and all department heads, a monthly meeting of the mine superintendent, safety engineers, and all underground foremen, and a workmen's mine safety committee. These committees meet to consider accident reports and to make recommendations with a view to accident prevention.

We are well acquainted with the research work of the Bureau of Mines in the field of mine safety and the excellent educational program of that agency with respect to mine rescue work.

For many years we have called on the Bureau of Mines for assistance in mine rescue and first-aid training. The high regard of our industry for the work of the Bureau of Mines is ample evidence of the effectiveness of the present relationship.

The hard rock mining industry of the West has an enviable safety record. The western mining States have State mine inspectors func-

tioning under the framework of State mining codes which are set forth in the various State statutes. Such State officials, acting in conjunction and cooperation with the safety departments of the various mine operators, have proven more than adequate to competently handle problems of mine saftey.

We see no reason whatsoever for the Federal Govrnment to invade this field of endeavor. Basically and fundamentally, this is a matter of States rights, and an apt illustration of the constant reach for power on the part of those proponents who advocate an ever larger and larger central authority calling the signals from Washington.

Such proposed Federal legislation, if enacted, would serve only to weaken the effectiveness of the State mine safety programs now in existence.

Mine operators of the West are keenly aware of safety matters, have good safety programs, and obviously are interested in preventing accidents, not only for humanitarian reasons but because it is to the best economic interests of both employer and employees to establish safety programs which reduce the accident hazard.

We believe that if H. R. 9269 or H. R. 9343 or similar bills were adopted by the Congress, the net result would be to convert the Bureau of Mines into the role of a policeman, seriously impair its present efficiency in the field of research, and accomplish little, if anything, in improving safety conditions in the mines of the West.

Mr. METCALF. That is the last witness for this morning. The committee will be in recess until 2 o'clock this afternoon, when we will reconvene to hear the last of the industry witnesses.

(Whereupon, at 12:15 p. m., a recess taken until 2 p. m. of the same day.)

AFTER RECESS

(The hearing was resumed at 2 p. m., Hon. Lee Metcalf, chairman of the subcommittee, presiding.)

Mr. METCALF. The subcommittee will be in order.

We have some statements that have been submitted for the record, and the committee will accept them at this time, to be incorporated immediately after the statements of the witnesses this afternoon.

Mr. HUSSEY. The first one is from the State of Colorado Commission of Mines.

Mr. METCALF. That is a letter dated November 30, 1956, from the State of Colorado Commissioner of Mines, Denver, Colo., signed by Walter E. Scott, Jr., commissioner.

A letter dated November 30, 1956, from the Salt Lake Chamber of Commerce, signed by Gus P. Backman, secretary.

A letter dated November 26, 1956, from New Park Mining Co., Keetley, Utah, signed by Clark L. Wilson, vice president.

A letter dated November 20, 1956, from Newmont Mining Corp., 300 Park Avenue, New York, N. Y., signed by Carroll Searls, secretary and general counsel.

A letter dated November 28, 1956, from United Park City Mines Co., with general offices at Heber, Utah, signed by S. K. Droubay, general manager.

A statement submitted by Wyoming Mining Association, made on the 26th day of November 1956, and signed by the association president.

A letter from Victor Chemical Works, Chicago, Ill., dated November 28, 1956.

A letter from the Governor of the State of Nevada, Charles H. Russell, dated November 28, 1956.

A letter dated November 28, 1956, signed by Robert S. Palmer, 204 State Office Building, Denver, Colo.

A letter from the State of Nevada, Nevada Industrial Commission, Carson City, Nev., dated November 27, 1956, signed by Guy A. Perkins, chairman.

A letter from the Nevada Mining Association, Inc., dated December 1, 1956, signed by Louis D. Gordon, executive secretary.

A letter from the State of Nevada, office of inspector of mines, dated November 28, 1956, signed by Marvin J. Gallagher, State inspector of mines.

A letter from the Golden Cycle Corp., Colorado Springs, Colo., dated November 30, 1956, and signed by Max W. Bowen, executive vice president.

Unless there are objections, the various statements and letters will be incorporated in the record as previously mentioned. Unless there is objection, the record will be kept open until the 17th of December for further statements such as the ones I just referred to, or for additional statements that any of the previous witnesses wish to file, subject of course to screening by the staff for redundant matter that is too verbose for the record. The staff will insert future material up until December 17, at which time the record will be closed and sent to the printer.

We are very pleased to have here the last industry witness, one of the distinguished citizens from my congressional district, Mr. Renouard, of the Anaconda Copper Mining Co. The members of the subcommittee that were in Butte were taken through the mines by Mr. Renouard and his staff. We spent a good deal of time with him in looking at the facilities that they had. At that time I asked him to summarize and put in to testimony some of the things that he told the members of the subcommittee so that we would not only have it for our own benefit but for the official record.

So we welcome you back here again before the subcommittee as a witness this time instead of our host and guide, as you were in Butte. Will you proceed, please.

You have Mr. Finlen with you, who has already appeared before the committee and we welcome you back again, Mr. Finlen.

STATEMENT OF E. I. RENOUARD, MANAGER OF MINES, THE BUTTE DISTRICT OF THE ANACONDA COPPER CO.; ACCOMPANIED BY JAMES T. FINLEN, WESTERN COUNSEL OF ANACONDA CO.

Mr. FINLEN. If the honorable members of the subcommittee please, for the record I will identify myself as James T. Finlen, the western general counsel of the Anaconda Copper Co. For the purposes of the subcommittee and the staff, I present for the record a signed statement of Mr. E. I. Renouard, who is here present, supported by exhibits lettered from and including A to E.

(The statement and exhibits follow:)

STATEMENT BY E. I. RENOUARD, MANAGER OF MINES, BUTTE DISTRICT, OF THE ANACONDA CO.

I, the undersigned, E. I. Renouard, of Butte, Mont., make this statement for the information of the Subcommittee on Education and Labor of the House of Representatives of the United States, constituted by the 84th Congress, to supplement the information received by the subcommittee on September 17, 18, and 19, 1956, at Butte, Mont., in visiting the underground workings of the Kelley mine, the central compressor plant, the ventilation research laboratory, the Berkeley pit, the precipitating plant, underground workings of the Mountain Con mine, and surface plant areas of the Anaconda Co., and by unsworn witnesses testifying at a hearing in the Federal Building at Butte, Mont.

Since November 1, 1952, I have been and now am the manager of mines of the Anaconda Co., residing at Butte, Mont., and previous to my appointment as such manager I received formal education and was employed by said company as follows: Graduated from Butte High School in 1916, from Montana School of Mines with a degree in mining engineering in 1920. Thereafter I worked for Anaconda as a miner and shift boss until 1922; then as a sampler; then as a safety inspector; then as acting assistant foreman, assistant foreman, acting foreman, and foreman, respectively. January 1, 1941, I became assistant general superintendent, and January 1, 1951, general superintendent of mines, and so remained until I became manager of mines. I was born in Butte, Mont., May 31, 1898, and in 1953 received a professional degree causa honoris from Montana School of mines.

The Subcommittee on Education and Labor of the House of Representatives was appointed by the Honorable Graham A. Barden, chairman of the Committee on Education and Labor, on or about July 7, 1956, to consider and hold hearings with respect to H. R. 9269, 9294, 9343, 11376, 11658, 11713, and 11997, respectively, all relating to health and safety in metallic and nonmetallic mines and quarries, excluding coal and lignite mines. The bills do not relate to health or safety in mineral-reduction plants, smelters, mills, or other such surface industries.

Montana is not without comprehensive laws relating to health and safety in metalliferous mines. It has a Metalliferous Mine Inspection Act (secs. 50–101 to 118, Revised Codes of Montana, 1947, and see secs. 50–901 to 906, 69–1922, 94–35–105, 94–35–125 to 134, Revised Codes of Montana, 1947).

As to statutory provisions relating to occupational diseases, see sections 69–201 to 69–208, Revised Codes of Montana, 1947. Sections 71–1001 to 1008, Revised Codes of Montana, 1947, as amended by chapter 252, Laws of Montana, 1955, page 564, cover payments under the Public Welfare Act for silicosis.

Also, the commissioner of agriculture, as chief of the department of agriculture, labor and industry, is given power to examine witnesses and inspect mines (sec. 3–1503, Revised Codes of Montana, 1947).

Employment of children in underground mines is specifically forbidden by both the constitution (art. XVIII, sec. 3) and statute (sec. 10–208, Revide Codes of Montana, 1947). Also, the constitution places a maximum upon the number of hours of work in a day (art. XVIII, sec. 4), as do the statutes (sec. 41–1107, Revised Codes of Montana, 1947).

For the information of the subcommittee I submit herewith:

1. Exhibit A, relative to underground ventilation provided by the Anaconda Co. in its Butte mines.

2. Exhibit B, consisting of safety rules promulgated by the bureau of safety of the Anaconda Co., dated October 1952, a copy of which is provided by the company to each day's pay employee in the mining department in the Butte district when he is hired.

3. Exhibit C, consisting of supervisors' safety codes promulgated by the bureau of safety of the Anaconda Co., dated February 1953, a copy of which is provided by the company to each supervisor in the mining department in the Butte district when he is hired.

4. Exhibit D, consisting of data compiled by John L. Boardman, chairman, bureau of safety, the Anaconda Co., describing the personnel of the bureau and its varying activities.

5. Exhibit E, compiled by John W. Warren, chief ventilation and industrial hygiene engineer of the Anaconda Co., at Butte, Mont., relative to the ventilation and industrial hygiene department at Butte, Mont., containing the following information:

PICTURES

(1) The Anaconda Co.'s Butte industrial hygiene laboratory reference to chemical quantitation section.
(2) View of said laboratory with reference to dust quantitation section. Microprojector show one of first in mining industry for this purpose.
(3) Personnel of the Anaconda Co.'s Butte ventilation and industrial hygiene department, being the first department instituted in this country to cover the scope of underground mining. Instituted February 1, 1918.
(4) Graph descriptive of South African dust control.
(5) Graph descriptive of study on dust concentrations versus pathological consequence in this country.
(6) Dots show location of employment of men trained or assisted by said department for other nonparent organizations.
(7) Graph illustrating money spent for flexible air transmission duct in 1 year (1952) by the Anaconda Co., at Butte.
(8) Dust-control installation at Kelley mine, Butte, Mont.
(9) Flexible air transmission duct installed in mines in Butte district of the Anaconda Co.
(10) Expenditures for ventilation since 1946 by the Anaconda Co., at Butte.
(11) Composite of threshold codes for dust for six States.
(12) Thresholds for various types dusts.
(13) Thresholds for some atmospheric contaminants.
(14) Illustrative of slushed block ventilation.

PRINTS

(*a*) Pages 1 through 8 are descriptive of our organization, assignments, and work prosecuted; they are also descriptive of future projects.
(*b*) Pages 1 through 5 are descriptive of moneys spent for ventilation and contaminant control in the Butte district alone. Ventilation highlights page 6. Responsibilities and assignments, pages 7 and 8. List of personnel trained or assisted for nonparent companies. Ventilation department personnel includes Dr. Howard L. Hartman, professor of mining at the Colorado School of Mines, employed during the summer to assist us in research work. Consulting prosecuted by the writer for nonparent companies.
(*c*) Bulletin of a highly efficient and compact dust collector of which we were instrumental in developing, now available to industry.

This statement has for its purposes augmenting the information concerning matters of health and safety in the underground mines of the Anaconda Co. at Butte, Mont., which members of the subcommittee in attendance at the Butte hearing received from personal visitations and inspections of actual operating conditions and practices and presenting certain facts to controvert or explain oral statements made by union witnesses at the Butte hearing.

Underground mining generally is, and unfortunately always will be, inherently hazardous, and those of us charged with directing prosecution of such work at Butte can lay no claim to the contrary regarding our operations. Despite all of the very substantial well-spent time and expense directed to making the Butte mines safer and healthier, there is not, and never will be, any room for complacency as long as the possibility remains for a man forfeiting his life or his health in pursuing our business of ore extraction. However, even though we are ever alert to possibilities of increasing the inroads heretofore made against unsafe and unhealthy conditions, it is certain that the contributions thus far made are monuments to the ingenuity of dedicated management and employees. To realize this one has but to compare the results of today with the results of earlier eras in the mining of underground nonferrous metals or the results of underground mining operations in backward, foreign countries today. Further, no enlightened operator could, either in good conscience or economics, justify the fallacious, gratuitous assertion of some labor spokesman testifying at Butte that unsafe and unhealthy conditions are cheap and that saving lives and health and earning power is expensive.

Thousands of men, each a human being, are employed underground in Butte. The recesses beneath the surface of the earth into which they descend and work extend vertically for as much as approximately a mile and horizontally for as much as approximately 5 miles, resulting in vertical and horizontal workings which, if laid end to end, would extend approximately 9,000 miles. Inherent

in the very rock mined lurks a danger, silica. Augmenting this danger are numerous other dangers, such as those caused by bad air, extracting and removing tremendous tonnages of ore and waste, changing temperatures, and using high-speed tools, machines, and other equipment, together with substantial quantities of timber, explosives, and supplies.

We showed the subcommittee at Butte some of what we are doing about these problems. This written record is intended to supplement that showing.

Let us consider the complaints lodged with the subcommittee at the Butte hearing by union representatives.

An enlightening contradiction in position came from the lips of the president of the Montana Federation of Labor. I quote him from the record:

"It is a fact that our State [Montana] and other States have failed to enact safety codes to protect the miners who work in the metallic and nonmetallic mines. What laws or codes there are on the statute books are obsolete and have not been revised in keeping with the times. These State codes also suffer from a lack of adequate appropriations, lack of trained men with civil-service status, and the inevitable State politics" (transcript, p. 311).

In response to questions by Congressman Elliott, the declarer replied:

"Mr. ELLIOTT. Do you know, Mr. Umber, does this State have a State mining department or a State safety department or a State mine inspector?

"Answer. It has mining codes for the coal-mining industry, but I don't know and am not familiar with the codes.

"Mr. ELLIOTT. But no mining codes for the metal mines?

"Answer. I am not familiar with that.

"Mr. ELLIOTT. Do you know whether or not the State makes regular inspections of the coal mines and of the metallic mines of the State here?

"Answer. I believe they do" (transcript, pp. 312 and 313).

Not to be outdone by the State president, the president of Butte Miners' Union No. 1 declared at the hearing that there did not seem to be as much wetting down of the shafts and working places as there used to be (transcript, p. 408). He was a shaft miner when he mined and as such he did not have occasion to visit and observe other underground mining areas. Further, by his own admission, he quit mining for good when his vacation came in 1955 (transcript, p. 403).

Testifying at Butte concerning mining was one employed as a motorman, not a miner at all (transcript, p. 379). He complained that the stope miners should be given jackhammers to the end that in handling large boulders they could drill and blast, using only 2 or 3 sticks of powder instead of using more powder to shatter a boulder by an external explosion, which last-mentioned procedure would naturally create more smoke and powder fume (transcript, p. 378). All stope miners are furnished stopers, or what, in the vernacular of the miner, are referred to as buzzies, which are used for mechanical drilling. The miner has the equipment to drill a boulder, and if he elects to shatter one by the use of powder without drilling he is the person responsible for creating his own smoke and fume hazard.

He also complained of motors without brakes (transcript, p. 385) and of high voltage cables dragging on motors (transcript, pp. 387 and 388). It certainly could not be said that defective brakes do not develop upon underground mine motors or that high voltage cables are never dragged by a motor, but it is self-evident to any enlightened operator that even regardless of safety there is no economy in permitting motors to continue in operation with defective brakes or in permitting high voltage cables to continue dragging on motors. The company employs repairmen to eliminate such conditions and repair crews are continually at work doing so.

A statement at the Butte hearing was given by a union representative regarding one Ed Backa, who was killed as the result of injuries in the Kelley shaft. The subcommittee's informant stated that the signal bells were not in working order and that the accident could have been prevented if proper safety measures were taken (tr. p. 360). This statement is false. Backa was working in the No. 3 compartment of the shaft. A fellow employee informed Backa and others that he was going to ring for a skip in the No. 4 compartment. He did so. His request was transmitted to the hoisting engineer by both an auditory signal and a visible light, indicating that a skip should be moved in the No. 4 compartment. Following the injuries to Backa which resulted in his death, the engineer stated that he received a signal to lower the skip in the No. 4 compartment but for some reason which he was unable to explain he mistakenly lowered the skip in the No. 3 compartment. The death of Backa resulted in the same tragic story that mankind hears only too often, human error. The signals were in perfect working

order and no foreseeable safety measure could have been taken which would have prevented the tragedy.

Another complaint of an accident resulting in death lodged at the Butte hearing concerned one Marvin H. Johnson, killed May 17, 1956, by a falling slab. The very union brother who lodged the complaint stated to the subcommittee that when Johnson could not eliminate the slab by barring it down he kept on working, although prior to his death he indicated to a fellow workman that he was apprehensive about the looks of the slab (tr. p. 319). Had Johnson pursued any 1 of 3 courses open to him, his life would have been spared. He could have continued barring down until he eradicated the danger, or he could have placed safety stringers above to prevent the fall of ground, or he could have dislodged the slab by blasting. Unfortunately, he did not pursue any 1 of these 3 courses. Again the human equation wrote the epitaph of another underground miner.

The same employee who directed the subcommittee's attention to the death of Johnson cited the instance of one E. M. Ranch, killed July 20, 1954, when a sill gave way under his motor, the latter weighing several tons. The subcommittee's informant said that for the sill to give way there must have been some working beneath the sill and that somebody should have known about the lower working (tr. p. 329). The facts are that there was a working beneath the sill. The working was 200 feet below the sill which caved, and through a wet, sluffing condition the working caved gradually until it brought down the sill. The offending working was in an abandoned area not accessible to anyone and neither bosses nor employees could, by the exercise of any amount of diligence, have discovered the lurking danger working beneath the sill.

The members of the subcommittee attending the Butte hearing will doubtless recall a former miner who made a statement at the hearing and who appeared there with an oxygen tank and a mask. He left the impression that his condition was due to a mine injury in December of 1950 (tr. p. 185). It appears from our records that from 1956 on he did not work steadily because of a severe heart condition. Despite his statement that he was injured in December of 1950, the company's records show that he was injured in December of 1951. The attending physician's report describes his injury as "contusion and abrasion of left elbow. Contusion of chest, anterior and posterior. Subconjunctival hemorrhage of both eyes. Chronic endocarditis." No fractures were found, although he informed the subcommittee that his ribs were cracked all the way around (tr. p. 184). The period of disability was estimated by the doctor to be from 6 to 8 weeks. He was paid compensation for 8 weeks disability, resumed work on February 16, 1952, and worked quite steadily until September 1953, when he quit, stating that he was "sick." In May of 1955 he was employed at light work as at watchman because of a chronic heart condition. He was discharged from this job in November 1955, for being drunk on the job and disobeying orders.

Complaint was made at the Butte hearing that unsafe conditions resulted from the company using rock or roof bolts instead of timber (tr. p. 123). As a matter of fact, the use of roof bolts has proved to be one of the finest safety measures adopted in recent years. True, in certain types of ground, timber is preferable, while in other types, rock bolts are preferable to timber, and in still other ground, both rock bolts and timber are used to insure safety. Many of the old miners used to timbering are quite reluctant to accept rock bolting in any case as a substitute. Upon the other hand, many other miners have found the transition to their liking and are wedded to rock bolting quite generally in place of timbering.

Another complaint which the subcommittee heard made at the hearing in Butte had to do with the contention that electric blasting was safer than fuse blasting (tr. p. 127), creating less dust and smoke (tr. p. 128). There is a decided difference of opinion as to the relative safety of the two methods of blasting. However, the miners in Butte at least are used to the fuse blasting method. It is certain that greater skill or technique is required to blast electrically than by the use of fuses, and for the uninitiated in using the former method such use would be attended by greater danger. Also, under certain conditions in underground mines the use of electric blasting is not practical and it would be senseless to require it under such circumstances as it would be to require a stoplight at each intersection in a large city.

At another point in the Butte hearing reference was made to the death of a miner killed in the Mountain Con March 13, 1956. The subcommittee's union-employee informant stated that the death could have been avoided if the motor

coupling involved had been in perfect order or if the miner killed had spotted his load elsewhere to work on it (tr. p. 323). Death resulted from the deceased working on a car without sufficient clearance so that when he signaled his partner to move the load he was crushed between the car and a rock bolt. A balky coupling was involved. The motorman, so the State mine inspector found, should not have employed the use of a car with a coupling not working properly. The record is silent as to when or how the coupling became defective—another case of death attributable to human error.

A miner appearing before the subcommittee at Butte complained about one man working alone in a stope (tr. p. 391). Miners do not work alone in Butte stopes; they work in pairs as partners on a joint contract. Approximately 2 or 3 percent of the stopes are divided by raises with 1 of each of the 2 partners working in 1 of the 2 compartments of the stope. The raises are only from 13 to 18 feet wide, and partners working in such stopes can communicate with each other easily orally.

The same informant who complained about one man working in a stope complained of the use of blowpipes, not for the purpose for which they are furnished, for the purpose of wetting down drifts before blasting, but for other purposes throughout the mines, resulting in needless dust (tr. p. 391). Blowpipes do kick up dust. That is why it is against the rules to use them indiscriminately, such as for the purpose of cleaning a track. That is why other tools are provided to clean clogged tracks. It is true that underground rules are broken just as traffic laws are broken, but it is likewise true that the company endeavors to enforce them and that men are discharged for not obeying them and that bosses are fired for not seeing to it that workers under their charge obey them.

Another informant told the subcommittee that at one time in the mines at Butte, in all drifts and raises, the men had to use an air blast, but that they have fallen into disuse, creating a dust hazard (Tr. p. 370). They are currently used, or at least the company directs that they be used, and men with good sense use them, although undoubtedly some men who are careless do not bother. Rule 195 on page 48 of the company's safety rules provides:

"Use air-water blasts in drifts, crosscuts, and raises, * * *."

The same informant complained that air blasts—and for the information of the subcommittee the air in an air blast is mixed with water—have been taken out of the shafts (Tr. pp. 371 and 373). There is a division of opinion as to the effectiveness of air blasts lessening the dust hazard in shafts, but nevertheless they are available in some shafts today. They are not available in others, such as shafts where the ore is hoisted in cars rather than skips. In such shafts there would be no purpose in using them. Further, they cannot be used, quite naturally, in any shaft in subzero temperatures.

An assistant business agent of the electricians' union lodged a number of complaints in appearing before the subcommittee (Tr. pp. 302, 303, 305, and 306). Each will be mentioned and discussed.

1. At the Kelley mine, he stated that when electric switches were undergoing repair the motors should be stopped. The informant undoubtedly had in mind a case where an electrician who had been working on a switch was killed by an oncoming motor. The fact that he had been working on the switch was not the cause of his death. The cause of his death was due to the fact that in leaving the switch to get out of the path of the motor he stood, unfortunately, in such a location that he was caught by a car jumping a track switch. His death was no more caused by his work on the switch than it would have been caused by his appetite for food if he had been eating his lunch instead of repairing the switch prior to the arrival of the train.

2. The union agent asserted that no man should go alone in the slushers or stopes. We have previously discussed the charge of a miner working alone in a stope. Electrical repair work in stopes is generally done by two men.

3. The same agent contended that in the Berkeley open pit the primary electric lines are unsafe in that they are so close to the ground as to be reachable even by children. These lines are located in the pit where mining operations are conducted and where the public generally, let alone children, are excluded. They are not permanent installations for the reason that they must be moved as the circumference of the pit is extended. Further, they are enclosed within fences, except in one case where the connections are situated in a remote area. The lines run to disconnect switches and to save pole climbing the electricians disconnect them by remaining standing on the ground. To accomplish this they

must employ the use of long sticks. No primary is nearer the ground than 12 feet.

4. The union agent complained that at the Kelley mine when electricians are working on the main line the motors are not stopped. The true situation depends upon the nature of the work being done. If a loosened main-line bracket is merely being tightened, it might well be that the electrician working on the line could tighten the bracket without stopping the motors. On the other hand, if it was necessary to disassemble the main line for repair, the motors would have to be stopped.

5. The business agent also complained that the electricians must buy their safety equipment, tools, safety hats, shoes, and belts. This matter involves economics rather than safety. However, suffice it to be said that such are sold to the men by the company at list price without adding any selling cost.

6. The same agent complained that troublemen should not be sent in on electric-blasting repairs or that the troubleshooter on the 11 o'clock shift at the Kelley should not work alone. This is an old union cry that has been going on for a long time. It is not prompted, I am sure, by the desire to have more than one man killed in the event of a dangerous occurrence. It is prompted generally, management believes, by the desire of the unions to never have one man do a job if two or more can be hired to perform it.

Regarding the above complaints of the business agent, he stated that the union had not been able to remedy the situations by grievance procedures (transcript, p. 306). Within the scope of my knowledge, not one of these complaints has ever been made the subject of a grievance. In this connection, I am informed that the experience of the company's labor commissioner at Butte, as well as the experience of the electrical superintendent at Butte, confirms my own.

It may be recalled that at the Butte hearing a union representative volunteered that previous to the visit of the attending members of the subcommittee and the subcommittee's staff to the underground workings of the Kelley and the Mountain Con mines the company cleaned up the areas visited (transcript, p. 366). That charge is true. The company is a good housekeeper and around the clock it cleans up the working areas in all mines. It is an endless chore. But if as a general rule your housekeeping is poor, no amount of cleaning will make it orderly overnight. In connection with the charge that Anaconda made its underground workings at the Kelley and the Mountain Con ready for congressional visitors, it is interesting to note that the person who made the charge was not an employee of either the Kelley or the Mountain Con, but was employed in the Leonard mine, situated on the other side of the Butte Hill (transcript, p. 358).

This concludes my preliminary statement, dictated and signed this 28th day of November 1956 at Butte, Mont. It will be supplemented by a written statement to be compiled and signed by me at Washington, D. C.

E. I. RENOUARD,
Manager of Mines, the Anaconda Co.

Mr. RENOUARD. I would like to make this supplementary statement for the information of our subcommittee to augment the information contained in my statement which has been presented to your subcommittee, dictated and signed the 28th day of November 1956, at Butte, Mont.

While much of the language spent at the hearing in Butte was directed to the matter of workmen's compensation, including compensation for occupational disease, in this subject is not indicated as one within the purview of the subcommittee, I will not impose upon the time of the subcommittee or its staff by discussing such subject.

My previous statement hereinbefore referred to, with the exhibits supporting it, gives information as to the organization and effectiveness of the bureau of safety of the Anaconda Co. I desire to add the following information:

The bureau of safety of the Anaconda Co. was originated in 1912 and charged with the duty of studying accident causes and recommending means for the prevention of accidental injuries and the general welfare of employees.

The basic theory of the effort was to place responsibility for the prevention of accidents and the welfare of employees upon the operating staff of each of the company's mines and plants, and the bureau of safety was to give such service as might be required in regard to the making of safety rules, mine and plant inspection, accident statistics and studies, educational efforts consisting of posters, publications, et cetera, first-aid and ambulance service, mine-rescue training and equipment, prevention of occupational illness and inducing general cooperation of the operating staff in the provision of safeguards, safe methods, and enforcement of safety rules.

In order to secure and maintain the required cooperation, safety committees. whose membership comprised the members of the operating staff, were formed. These committees, composed of foremen and superintendents, have held regular meetings at 2-week intervals since the beginning of 1914. At each of these meetings, accident causes, safety rules, and safety inspections are presented and discussed.

The bureau of safety has, directly or indirectly, either initiated or caused the adoption of wet drilling and elimination of harmful dusts; establishment of mechanically-controlled mine ventilation; improvement in safety of handling and transporting men into and out of mines; establishment and maintenance of change houses at the mines; improvement in safety of haulage underground; improvement in mining methods to increase safety; improvement in mine lighting, progressing from the general use of candles, to the modern electric battery cap lamps; improvement in elimination of fire hazards, and the safer methods of combating mine fires; the adoption of such personal protective equipment as protective hats, shoes, and prescription safety goggles; the adoption and maintenance of 24-hour ambulance service for employees, and the maintenance of adequate mine-rescue service not only for our own operations but also to serve other operators in emergencies. It has maintained adequate mine-rescue and first-aid training so that crews for fire fighting are instantly available, and it is, today, practically impossible for an employee to be injured anywhere on the property without receiving prompt and intelligent first-aid treatment.

As a net result of these activities, we show the following comparisons, quoting from page 25 of United States Bureau of Mines Bulletin No. 257, published in 1925, lost-time injury rate per 1,000 300-day workers:

(The table referred to follows:)

Years	All United States metal mines	All Butte mines	Percent reduction	Anaconda mines alone	Percent reduction
1920–22 inclusive	323.574	285.764	−11.685	217.200	−32.88

	Anaconda alone	Percent reduction below our own 1920–22 rate
1920–22 inclusive	217.200	
1955	89.635	−58.7
7 months of 1956	67.400	−68.8

Mr. RENOUARD. This shows that the lost-time injury rate of all Butte mines, including Anaconda, were in the 3-year period 1920 to 1922, inclusive, 11.685 percent below the national metal-mine rate. That Anaconda mines alone were 32.88 percent below the national metal-mine figure for the same period, and that the most recent years, 1955 and first 7 months of 1956 are 58.7 and 68.8 percent, respectively, below our own 1920–22 rate. May I suggest that in consideration of much deeper mining with its attendant added difficulties, our system of accidental-injury control has made a somewhat creditable showing.

Idea of the expenses of the Bureau of Safety can be had by consideration of the following:

	Total expenses
First 6 months, 1955	$45,560.12
Second 6 months, 1955	46,648.86
Total, year 1955	92,208.98
First 6 months, 1956	52,597.69
Total, 18 months	144,806.67

The recording secretary of Butte Miners Union at the Butte hearing submitted a report said to be compiled from the records of the county coroner's office in Butte, showing 346 fatalities in and around Butte mines since and including 1930 through August 1956 (transcript, p. 66). From the asserted causes of death as shown by the list, it is not possible to ascribe accident as the cause of, at least, 29 of these cases, and numerous other cases listed definitely appear not to have involved underground accidents.

Giving further consideration to the individual complaints made by union representatives at the Butte hearing, one was of blasting during the noon hour and at other times during the shift (transcript, pp. 104, 377). Rule 183 on page 86 of the safety rules of the company, exhibit B, provides "blasting during the shift should not be done unless it is absolutely necessary, such as in reblasting missed holes, blasting down loose rocks, or other emergencies."

The company is opposed to blasting during a shift unless safety requires it in an emergency such as to reblast to eliminate missed holes for the reason that blasting does produce irritating smoke and gas and as a result, aside from such gas and smoke, it produces harmful dust and induces a slack in production.

Meticulous record is kept by the company as far as it is able to keep such record of all on-shift blasting showing the time, place, number of holes drilled and exploded, et cetera. It is used effectively in investigating complaints of on-shift blasting to determine whether or not it was justified by emergency conditions.

It is safe to say that all on-shift blasting done in emergency or otherwise does not amount to 1 percent of the total blasting done.

One of the informants complaining about blasting during the shift, a former union organizer, stated at the Butte hearing that 15 months ago (transcript, p. 111) when he last was employed at the Belmont mine, such mine had no filtering device to remove dust from the air (transcript, p. 111). Incidentally, the Belmont mine is now closed and, of further significance is the fact that the man testified in Butte that he was wholly disabled (transcript, p. 102). He has an interesting disability record:

July 7, 1949, he was injured in the mines. Thereafter, until February 1, 1951, when he finally settled his claim for compensation because of the aforesaid injury, he received a payment bringing his total payments for the injury to the sum of $5,039.29. The next month, March 1951, he began drawing silicosis benefits. Another unionman informed the subcommittee that total disability is a requisite of receiving such benefits under Montana law (transcript, p. 17). Yet, the man returned to work in the Butte mines January 16, 1956, and continued until 1954, when he became president of the Butte Miners Union.

Following his 1954 term as president, on January 12, 1955, he returned to underground employment at Butte and continued at such employment until stricken at home with a heart ailment in June 1955. He has pending a disputed claim for compensation, alleging his heart ailment is the result of strain received at work. He stated that he became totally disabled so as to qualify for silicosis benefits in 1951; thereafter, the company records disclosed that he earned, as an underground miner, from Anaconda in 1952 and 1953, the sum of $9,409.14.

In addition to blasting, this former miner complained of the use of forced-air ventilation in underground areas (transcript, p. 107). Actually, in ventilating dead-end areas, forced air is generally recognized as the best system possible for ventilation. In getting air to the working breasts as soon as possible through the introduction of forced draft, it prevents the air from heating and from other en route contamination.

Of all witnesses addressing the Butte hearing, Ernest Salvas, executive board member of district 1 of the International Union of Mine, Mill, and Smelter Workers Union, spoke at greatest length. He contended that in regard to using nationwide standards of health and safety it would prevent the possibility of unsafe conditions as a competitive-cost factor. In the mining industries, because of the extremely wide variety of conditions under which mining is pursued throughout the Nation, nationwide standards could be applied only with a very broad stroke. Further, any operator unrealistic enough to attempt unsafe operations with a view of thereby securing competitive advantage in this day and age would, at least, be in for a most expensive as well as enlightening awakening.

Salvas, at page 13, commencing on line 3 of the transcript, stated:

> We have in Montana since July 1941, a law under which fully disabled silicotics who are unable to engage in any manual labor receive public welfare benefits. These benefits after several successive increases now amount to $65 a month.

Again, on page 17, line 1 of the transcript, he states:

> The eligible requirements for receiving benefits, which is entirely apart from compensation, is 10 years' residence and total disability.

Neither of these statements is accurate. Under section 71–1003 (C. R. M., 1947), as interpreted by the attorney general of the State of Montana, a single man may qualify for silicosis benefits provided he is not earning more than $175 per month. A married man may receive the benefits if he does not earn more than $200 a month, and a married man with a child or children can qualify for the benefits if he does not receive more than $225 per month.

A substantial majority of the persons afflicted with silicosis in this area who receive benefits under the Montana law are over 65 years of age and also receive social-security benefits. Many of them receive

a pension from their former employer in addition to the silicosis and social-security benefits. A considerable number of them are engaged in occupations which provide them with a fair income. In fact, some are earning substantial wages in excess of the legal maximum working at various jobs, including underground mining.

Thus, any impression that a silicotic must be totally disabled to qualify for a silicosis benefit or, having qualified, that this monthly income is limited to $65, is entirely erroneous.

On page 17 commencing on line 7, Salvas states that for every totally disabled or third-stage silicotic there are many more with partial disability who will eventually become totally disabled. He continued by stating the number of partially disabled "so-called first and second-stage silicotics—according to various studies, has varied from 3 to 10 times the number of third-stage cases." This statement is entirely inaccurate and misleading.

First of all, the Montana State Tuberculosis Sanitarium at Galen, Mont., arbitrarily classifies a second-stage silicotic as totally disabled and he becomes eligible for the benefits unless his known income at the time exceeds the allowable limit. No statistics, which we know of, are available concerning the number of people who have first-stage silicosis, but certainly Mr. Salvas is not correct in his conclusion that there are from 3 to 10 times the number of "partially disabled" silicotics as there are persons disabled from this disease.

On page 19 at line 19, Salvas states:

> We have contended for years that Federal inspection of the metal mines, such as is proposed in the specific bills before this committee, is one of the very necessary steps required for reducing the dust hazard.

Before creating a new governmental agency for the inspection of mines, we should first understand the facilities which are presently available for this work. Under Federal jurisdiction, we have the Bureau of Mines and the United States Public Health Service. In addition, the industrial hygiene division of the Montana State Board of Health is specifically authorized to inspect the causes of all occupational disease. Also, the industrial accident board of the State of Montana has jurisdiction and supervision over employment and places of employment and powers to issue rules and regulations regarding safety of employees. If there is a problem of inspection, and none has been shown, it most certainly is one of administration as distinguished from legislation.

Salvas, commencing on line 20 at page 16, asserts that, in a State in which the average metal mining employment has varied between six and eight and one-half thousands, the reported number of silicotics is extremely great. By this statement he infers that the dust hazard in the mining industry in this State is great and remedial action is required.

Authorities at the Montana State Tuberculosis Sanitarium at Galen, Mont., agree that most of the persons qualifying for silicosis contracted the disease before 1925 and are more than 60 years of age. Since that date the major dust control and prevention measures have been effected in the principal mining operations of this State, which practically eliminate the possibility of new cases developing. We believe the present number of silicotics on the State rolls may be attributed to:

(*a*) Disability which is a combined result of the disease which originated many years ago and the advanced age of the person afflicted; and

(*b*) A migration into the State of Montana of silicotics who are unable to obtain employment elsewhere because of physical examinations necessitated by the enactment of occupational disease laws.

A number of persons receiving silicosis benefits has no necessary relationship to the number of peresons who contracted silicosis while working for the mining industry in this State and is not necessarily relevant to the determination of whether additional legislation is required.

There follows examples of how Salvas uses statistics:

He mentioned as alarming the sharp increase in the rate of fatal accidents in recent years in Montana metal mining (transcript 20–21).

He gave the fatal accident rate in Montana metal mines from 1952 to 1956 as varying from a low of 2.29 to a high of 2.84 per 1,000 workers. According to the United States Bureau of Mines statistics he gave the fatality rates of all United States metal mining per thousand workers as follows:

1953 (preliminary)	0.94
1952	1.35

From United States copper mining:

1953 (preliminary)	1.02
1952	1.13

(Transcript 25)

At one point he admitted that his statistics were crude (transcript 27). I must agree with him. The United States Bureau of Mines underground fatality rates for recent years, including the years specifically mentioned by Salvas, are given on a million-man-hour basis thus:

One thousand 300-day workers represents, 2,400,000 man-hours, and a rate per 1,000 300-day workers must be divided by 2.4 to give the rate per million man-hours. Therefore, for example if the 1953 figure employed by Salvas relative to fatalities in all the United States metal mining was 0.94 per 1,000 workers is mistaken for a rate of 4.94 per million man-hours, his mistake is one amounting to 350 percent.

Regarding the charge of sharp increase in Montana metal mine fatalities in recent years, the figures of the Anaconda Co. relative to its Butte mines are not crude. They are exact. They follow:

Fatal accident frequency rate, per 10,000 shifts: For the period 1936 to 1945 inclusive, 0.104; for the period 1946 to 1955 inclusive, 0.081.

This shows a reduction of 22.11 percent in the last 10-year period.

The rates for serious accidents that resulted in the injured man losing more than 14 days from work were (and this does not include fatal accidents):

1936 to 1945, the rate was 4.364 per 10,000 shifts worked.

1946 to 1955, the rate was 2.357 per 10,000 shifts worked.

This is a reduction of 45.99 percent in the last 10-year period.

The rate for the same category to November 27 of this year is 1.442 per 10,000 shifts, which is a reduction of 38.82 percent below the

1946 to 1955 rate, and a reduction of 66.95 percent below the 1936 to 1945 rate.

While the company will always strike to reduce the accident rate of its workers to the vanishing point, it is a fact as of today that of death-dealing blows the automobile strikes with greater frequency than does the combination of all hazards underground.

The only medical witness to make a statement at the Butte hearing was Dr. Paul Ensign of the Montana State Board of Health. He frankly admitted that he was not an expert on silicosis. He indicated the high incidence of tuberculosis in Deer Lodge and Silver Bow Counties to be related to silicosis although he advised that some well-qualified medical authorities were not in agreement with what he termed to be the general concept. Such dissenters, so he said, pointed to the other factors such as lack of local health facilities, general educational level, and alcoholism (transcript 196, 197).

To such factors other factors may be added. One is the fact that neither Silver Bow County nor Deer Lodge County has an excellently functioning county health department such as does Cascade County, Mont. Further, the high incidence of both discovered silicosis and tuberculosis in the first two mentioned counties is undoubtedly contributed to by the proximity of the State sanitarium at Galen, by the type of residents in the area, by living conditions, housing, et cetera. Also, in that Anaconda occupies a unique position among large employers of not requiring either preemployment or periodic post-employment lung examination, substantial numbers of silicotic and tubercular persons seeking employment are unquestionably attracted to the Silver Bow and Deer Lodge County labor markets.

Regarding the Butte mines as a current producer of silicotics, we do not believe, and in this we invite the unions to produce records establishing the contrary, that in recent years any Butte miner has been diagnosed by Galen as silicotic and is receiving silicosis benefits who:

1. Did not work in Butte mines prior to 1925 when wet drilling was inaugurated; or
2. Did not work underground elsewhere than in Butte.

Of interest concerning silicosis in Silver Bow County, Mont., I submit herewith exhibit F dated November 29, 1956, showing that St. James Hospital in Butte, Mont., had 80 cases of tuberculosis diagnoses in the last 10 years of which 59 were males, 21 were females, 20 were miners, and 60 were not miners.

Table 8, introduced by a union representative at the Washington, D. C., hearing of this subcommittee speaking for the period, 1950–54, concerning injury frequency rates, discloses that highways and steel construction, that sawmills and planing mills, that stevedoring and logging, not to mention coal mining, have higher frequency rates than either nonmetallic mineral mining or metal mining.

The subcommittee has been informed that under Montana law a prerequisite for securing silicosis benefits is total disability. The Anaconda Co. legal adviser informs me that while the statute refers to total disability, in view of a decision by the attorney general of the State in the light of which decision the law is administered, silicotics who have earning power and who actually earn wages receive compensation under the law.

Information has been given to the subcommittee at the Washington, D. C., hearing indicating substantially more silicosis reported in Montana than in Arizona despite the fact that approximately the same number of men are employed in mining in these two States. Undoubtedly, one reason for the high incidence of known cases in Montana in relation to the reported cases in Arizona is that fact that much of Arizona's metal mining involves open-pit operations, and that is not the case in Montana. Also, the largest employer of mining labor, by far, in Montana is the Anaconda Co., and it does not require preemployment lung X-ray examination. In this respect it is unlike any other large employer of hard-rock mining labor in the United States, and unquestionably, as a result, silicotics in substantial numbers are attracted to the Butte labor market.

Throughout the years numerous requests have been received by the Anaconda Co. from the United States Bureau of Mines and the United States Public Health Service for data and, as regards the Bureau of Mines at least, for the right of property inspection and for the exchange of technical information. No request in any such connection has ever been refused by the company. Incidentally, the Bureau and the company have upon a number of occasions jointly worked out problems involving ventilation and dust control.

For the further information of the committee, I submit herewith marked "Exhibit G" a copy of the 1955–56 Report of the Industrial Accident Board for the State of Montana. It shows, for example, that the injury ratio for the period dealt with was greater in contract construction than in mineral extraction, pages 2 and 3. In view of the oft-repeated statement during the course of these hearings that State agencies are unable to furnish accident statistics, we believe that the members of the subcommittee will be impressed with the detail contained in this exhibit, including the number of mine inspections by the State bureau of safety.

In determining the question of the advisability of Federal underground nonferrous mine inspection legislation, I urge particular consideration of the following:

1. The frequency and severity rates of accidents occurring in metallic and nonmetallic mines are considerably lower than those occurring in coal mines.

2. Major disasters (five or more killed in a single accident) is a rarity in metallic and nonmetallic mines while, unfortunately, this cannot be said of coal mines.

3. Explosions of gas and coal dust, and fire are the principle causes of disasters in coal mines. That is not the case in metallic and nonmetallic mines other than coal.

4. The preparation, administration, and regulation of safety and health practices in metallic and nonmetallic mines other than coal mines, is primarily the responsibility of local authorities because mining and such operations are carried out under an extremely wide variety of conditions and practices.

5. Education rather than force is the best means of directing an employee to work safely. This program is carried forward by the Anaconda Co. by a corps of many alert and well-trained personnel.

6. If there is reason to turn loose a swarm of Federal inspectors upon the metal mining industry, frequency and severity statistics

show that there is more reason to turn loose swarms of Federal inspectors in numerous other industries. Why is it that the unions would start with mining?

The record should be made crystal clear, however, that the Anaconda Co. certainly does not oppose research by any source with sufficient funds and personnel and properly disposed to the end that such diseases as silicosis and lung cancer as well as occupational relationships thereto be thoroughly explored. It was suggested at the Butte hearing that the National Institutes of Health was an organization having the funds and the personnel to pursue such a course (transcript 203).

Further, the Anaconda Co. appreciates, and I believe that the mining industry generally appreciates, the valuable impetus given to its health and safety programs by the United States Bureau of Mines in making available accident prevention courses, disaster assistance, accident investigation, requested safety inspections, first-aid and respiratory and protective equipment training, dust and ventilation suggestions, and for the publication of material on various aspects of health and safety, including accident statistics and analyses.

In the future, as in the past, the Anaconda Co. will ever stand ready to assist any agency, public or private, in promoting health and safety for those who mine.

(Exhibits relating to the above statement follow:)

(Exhibit G, 1955–56 Report of Industrial Accident Board for State of Montana, is filed with the committee and is available for reference; exhibit F follows:)

ST. JAMES HOSPITAL,
Butte, Mont., November 29, 1956.

How many cases of tuberculosis in the last 10 years?	80
How many cases were males?	59
How many cases were females?	21
How many cases were miners?	20
How many cases were not miners?	60

Sister MARY AIDAN,
Registered Record Librarian.
J. C. SHIELDS, *Surgeon.*

Mr. Elliott, do you have any questions to ask Mr. Finlen or Mr. Renouard?

Mr. METCALF. Thank you.

Mr. ELLIOTT. I had one question to ask Mr. Renouard. When the subcommittee visited your mines at Butte in September of this year, you showed us a machine on the outside of one of the mines that was what I would crudely call a dust interceptor. What is the name of that machine?

Mr. RENOUARD. They call it a microdyne. It is a machine that has been gotten out basically by the Joy Manufacturing Co. with the help of the engineering staff of our ventilation department. It is now on sale by the Joy Manufacturing Co. to anybody who may wish to buy it.

Mr. ELLIOTT. How long has it been on sale, Mr. Renouard?

Mr. RENOUARD. I think within the last several weeks. I think that they are trying to improve it, if they can, and they are building larger ones than the one that you did see.

Mr. ELLIOTT. Are you using those machines in any part of your mine to date?

Mr. RENOUARD. We only had the one that you saw, but we have two on order for a month, and we are ordering more this month, in December.

Mr. ELLIOTT. We saw the air going through this machine, so to speak, and we saw the condition of the air prior to the time it went through the machine, and then we saw the condition of the air afterward. Do you remember when we looked at it how many of the units of measurements or microns of dust was in this air at the beginning and many at the end?

Mr. RENOUARD. Well the micron is the size. I think that I understand what you are asking. The statement was made to you gentlemen that 99 plus percent of the dust had been removed by going through this machine. Now, then, the size of the dust particles are measured and our equipment only goes down just below 1 micron. We have identified three-fourths of 1 micron, but no smaller than that. But we will investigate any dust conditions that have as low as 10 microns of dust in the air. That is a measuring device, and we have not the equipment to tell what is left, in the size of what is left in that less than 1 percent of the dust that originally was in the air.

Mr. ELLIOTT. The point I want to make is that the machine filters out 99 percent of the dust.

Mr. RENOUARD. That is correct.

Mr. ELLIOTT. It filters out all of the dust of a certain very minute size measured in microns.

Mr. METCALF. All of the dust above 1 micron.

Mr. RENOUARD. We have figured but we can not prove this by visual evidence through our microscope, but we think we have gone down below or close to a quarter of a micron.

Mr. ELLIOTT. All dust of one-half micron or more.

Mr. RENOUARD. It would be hard for us to prove that to you except by doing it mathematically by weights and so on. We cannot show that to you with our equipment or with the equipment we have now. They are working on a new type of a microscope and it is going to be electronically controlled and also you can read it electronically, so that the tests, if they ever prove this to be successful, which they have not yet, as it is still in the experimental stage, then there will be no doubt of the size of the particles or parts of micron measurements.

Mr. ELLIOTT. How many microns of dust are presently considered dangerous?

Mr. RENOUARD. I could not answer that question but we will investigate anything with 10 microns of dust in it. I think when you get down to that small size dust particle, there is a difference of opinion among our medical men. Some say that when you get below 1 micron there is nothing injurious, and others say when you are below 10 microns there isn't too much injurious, but there is a difference of opinion there and I couldn't answer your question.

Mr. ELLIOTT. Regardless of what that opinion is, this machine we saw will cut out dust of 1 micron or above in size?

Mr. RENOUARD. That is right, and we think and we cannot prove that it takes out considerably smaller than that.

Mr. ELLIOTT. That is all.

Mr. RHODES. I have no questions.

Mr. FJARE. I have no questions.

Mr. METCALF. I know that the members of the subcommittee again want to renew their gratitude to you and to the Anaconda Co. for the courtesy that you showed us in being our host and taking us through the representative mines. We realize and I know that you realize that we were not on a mine inspection tour to find whether or not there were violations of safety regulations. The committee wanted to familiarize itself with a certain representative type of mining such as is conducted in the Butte area. We did gain a great deal of information about mines and mining techniques in the course of that tour.

During that tour we met with your engineer, Mr. Warren, and Mr. Warren had done extensive research in dust removal. I am wondering if you have made available to the industry some of the work that he has done.

Mr. RENOUARD. Yes; indeed we have. We have made it all available, and we have gone much beyond the scope of what you might imagine.

For instance, we give to different universities and to the School of Mines, educational staff, our technicians. At the University of Minnesota and the University of Michigan and the School of Mines of Montana, and some to the Colorado School of Mines. We have donated these men's services, and they give an actual class running from 3 days to a full week in which all of the highlights of the developments in the year are given to the classes that are taking mining at those institutions.

We also publish in our technical magazines this information.

In the meetings of our technical societies, each society whether it is the mining society, or the metallurgical or electrical societies, they have papers that are submitted at certain times during the year, whether quarterly or annually, and these papers deal with the highlights of the developments of each one of those particular branches of the industry.

These papers are later not only discussed at the meeting but they are published in magazines that are distributed to the mining industry.

Mr. METCALF. Now, have you worked in cooperation with the Bureau of Mines?

Mr. RENOUARD. Yes, indeed. We have worked with the Bureau of Mines a great deal. In fact, the Bureau of Mines—to put it the other way—have worked with us. They have come to Butte on several occasions and they have helped us with our problems, and I think at one time they worked several months on ventilation problems. We worked with them, and in fact I was loaned to the Bureau of Mines at that time and I worked constantly on the problems at hand. But there has been never a time that we didn't feel able to call on the Bureau of Mines for many things. They have been the backbone of our first-aid instruction, and also our mine-rescue and helmet training programs.

Mr. METCALF. Have you ever refused access to any of your company mines, or refused access to the Bureau of Mines or any of the representatives of the Bureau of Mines?

Mr. RENOUARD. Never.

Mr. METCALF. Has your company ever refused access to the members of the Public Health Service?

Mr. RENOUARD. No, sir. We have worked just as closely with them, and in fact the work that we have done lately with the Bureau has

also been with the health department. We feel that they are much needed and we would like to see them bigger, if possible, where they could do more research.

There have been times when the Bureau has come to Butte and used our apparatus because they have not had the apparatus to do their own work.

Mr. ELLIOTT. On yesterday, Mr. Renouard, we had evidence of the rather high degree or high number of silicotic cases in the county in which Butte is located, the number being, I believe, found over a 5-year period, 1950–54, of about 588. Do you have any explanation for that situation?

Mr. RENOUARD. Well, I just don't know how to answer that question. To start with, I question the number of silicotics in the Butte area over that period of time. In our statement we submit——

Mr. FJARE. Wasn't that tuberculosis?

Mr. METCALF. That number of 588 was the number of people who were drawing compensation for silicosis from the Montana Welfare Department.

Mr. RENOUARD. That could be right.

Mr. ELLIOTT. It was not the county?

Mr. METCALF. It was not confined to Silver Bow County, where Butte is located.

Mr. ELLIOTT. Well, here is a statement on rates for newly reported tuberculosis cases for Silver Bow County. The rate per 100,000 of population in Silver Bow was 96.7 cases in the period 1951 to 1955. That was against a total for Montana, a rate of 32.9. In other words, the rate in Silver Bow County was 97 in round numbers per 100,000, and the rate in Montana was 33 per 100,000. If you took out Silver Bow County, the rate for the State would be 27.1 per 100,000 of population which would indicate a rather high incidence of tuberculosis in Silver Bow County.

Do you care to comment on that, Mr. Renouard?

Mr. RENOUARD. I would comment this way: Montana is one of the few States where large mining operations are carried on where no preemployment lung X-rays are taken. In other words, a man with a high degree of silicosis could be employed, and we do know that we have men that have come from other States where they have been prohibited from even going to work, that are working in the Butte mines.

Mr. ELLIOTT. You don't give prelung examinations to your employees?

Mr. RENOUARD. No, sir; we do not. We have the preemployment physical, that includes back X-rays, and testing of the eyes, and minor things like that, but we do not take X-rays of the lungs or chest.

Mr. ELLIOTT. The figures that I referred to have been called to my attention here, and they showed for the period 1950 to 1954 a finding by the articles on the precedence of silicosis in the United States, a reprint from the AMA Archives of Industrial Health, October of 1956, volume 14, page 379–386. They show that this study, or this TRASCO study found that 888 cases were in Montana for that period of time. These are case of silicosis.

As I recall from the time I was in Montana, your laws out there provide for welfare payments for people who become disabled by silicosis.

Mr. RENOUARD. That is right.

Mr. ELLIOTT. Undoubtedly these figures came from that source. Do you have any finding from your own medical department on the occurrence of silicosis?

Mr. RENOUARD. We have some statistics on silicosis, but they are rather hard for us to prove as long as we do not have a preemployment lung test. We do know that the environment in our mines is much below the standards set up by the Bureau of Mines, and in fact we have cut the Bureau of Mines standards quite deeply, and we try to keep the environment in the mines below that average of dust content. After 1925 when we first started on our dust control, we don't think that in our Butte mines we have contributed very much to silicosis. We do know that the men that are in our sanitarium in Montana that worked in the Butte mines are rather elderly men, and men in their late sixties, and they could have had silicosis before we ever started our work on it.

We feel now that it is practically an impossibility for the average man to receive silicosis in the underground Butte openings.

Mr. ELLIOTT. Have you had any cases show up of people who started to work subsequent to 1925, who have worked their entire work span with you?

Mr. RENOUARD. None that I know of.

Mr. ELLIOTT. You haven't any of those cases?

Mr. RENOUARD. No, sir.

Mr. ELLIOTT. That would be an element going to prove the thesis that you have, that your mines are so clean that silicosis doesn't develop.

Mr. RENOUARD. That is right. I think the first place that the Bureau of Mines started their dust control programs through the health service was in Butte. I believe I am right in saying that the man who conducted them was Dr. Brown. I might be mistaken about that name but it seems to me that is right. He came to Butte and he was the first man to take dust counts underground. It was from what he started that our ventilation department worked on this and for many years we worked very closely with the Bureau of Mines in our dust campaign.

Our vice president and general manager at that time cut the thresholds down very, very far as compared with the knowledge at that time. That is so that we would be extra safe in trying to keep the mines where silicosis would not become a problem .

Mr. ELLIOTT. And you keep your mines now much below the acceptable standards set for dust particles by the Bureau of Mines' findings?

Mr. RENOUARD. That is right. We try to keep them about one-fourth of what the Bureau of Mines says is O. K. Now, it isn't a hit or miss proposition with us. We have an engineer in the ventilation department that goes to all mines continuously taking dust counts in every working place. He makes the trip through and he reports the counts and he picks out the ones that could be above the threshold that we hold, and we investigate and find out why. We see what we can do to improve it, and if not we will change the setup entirely where that one working place might be.

We know that there are times when air becomes laden with dust, like we could have a trip dump and dust would go down the shaft but

it is only momentarily, or like right after a blast in certain places there could be additional dust in the counts at that particular time. They would be high at that particular time, but during the general time a man is working in his working place, the dust counts are not high.

We have rules in our rule book, and I have submitted one of them to you showing what we expect the men to do to help the dust condition in wetting down and obeying the different rules in there, and we should not have silicosis in our mines.

Mr. METCALF. Thank you both for your second appearance before the committee, and the testimony. Your assistance has been very helpful to us in working out this problem.

Mr. RENOUARD. Thank you. I would like to say that we welcome you to come to Butte at any time, and we would be very happy to show you any of our workings and whatever you would like to see.

Mr. METCALF. I want to say that I have been just as proud of the testimony presented by my constituents, both the representatives of industry and the members of the Mine, Mill, and Smelter Workers, as my colleague, Mr. Rhodes, was of the gentlemen from Arizona.

Mr. RENOUARD. Thank you.

STATEMENT OF W. E. MITCHELL, MANAGER OF THE REDUCTION DEPARTMENT OF THE ANACONDA CO., ANACONDA, MONT.

Mr. MITCHELL. My name is W. E. Mitchell, of Anaconda, Mont., and I make this statement for the information of the Subcommittee on Education and Labor of the House of Representatives of the United States to supplement the information received by the subcommittee on September 17, 18, and 19, 1956, at Butte, Mont., in visting the underground workings of the Kelley mine, the central compressor plant, the ventilation research laboratory, the Berkeley pit, the precipitating plant, underground workings of the Mountain Con mine, the surface plant areas of the Anaconda Co., and by unsworn witnesses testifying at a hearing in the Federal Building at Butte, Mont.

I am 67 years of age, reside at 218 West Seventh Street, Anaconda, Mont., and since 1941 have been and now am the manager of Anaconda reduction department at Anaconda, Mont., of the Anaconda Co.

In 1912 I graduated from Washington State College at Pullman, Wash., receiving a bachelor of science degree in mining engineering, and concluded postgraduate work in mining engineering in 1915. From 1912 until 1916 I was employed in the testing department of the Anaconda Co. at Anaconda, Mont.; from 1916 until 1918, smelter superintendent at Great Falls, Mont., of the Anaconda Co.; from 1918 to 1931, superintendent of the zinc plant at Great Falls, Mont., of the Anaconda Co.; from 1931 to 1937, assistant general superintendent at Great Falls, Mont., for the Anaconda Co.; from 1937 to 1941, general superintendent at Anaconda, Mont., for the Anaconda Co.

While the matter of health and safety in a surface plant such as the reduction department, Anaconda, Mont., of the Anaconda Co. seems without the scope of the inquiry which the subcommittee was appointed to make, in that employees of such department made statements relative to health and safety in said plant at the September 1956 hearing, Butte, Mont., and for the reason that the chairman of the subcom-

mittee has invited management's views upon the subject, this statement is submitted for the subcommittee's information.

It is regretted that the members of the subcommittee did not have the advantage of visitation to the Anaconda reduction department to observe operation of the various plants in the department.

It is true beyond question that hazards attend employment in jobs having to do with operations of plants in the department. We who are engaged in this work for Anaconda at Anaconda operate a smelter, not a greenhouse. For example, as house painting with leaded paints and high ladders involves hazards inherent in the job, so employment of flame, temperature, and chemicals in our department involves inherent hazards.

This statement is presented to inform the subcommittee what steps we have taken and are taking at Anaconda to mitigate the unpleasantries as well as the danger attending plant operations and to correct certain incorrect representations made by plant union employees at the Butte hearing.

Regarding accidents, an Anaconda union employee stated before the subcommittee:

> * * * the company does make every effort where an accident—where an unsafe condition exists to eliminate it * * * (transcript, p. 139).

At another point the witness declared that the company makes every effort to provide the men with equipment to avoid the hazards of the plant, but in spite of this things happen (transcript, pp. 141 and 143).

He said that regular safety meetings were held in the plant; that a department of health and sanitation was established, and that as a result of it, for example, fluorine in the zinc dross had largely been eliminated (transcript, pp. 136–137).

For detailed information concerning our bureau of safety I present herewith, marked "Exhibit A–1," a signed statement by Safety Engineer Duncan MacDonald.

For detailed information concerning our ventilation and hygiene division I present herewith, market "Exhibit B–1," a signed statement by Industrial and Hygiene Engineer Walter J. Needham.

For detailed information concerning complaints registered by union members relative to Anaconda reduction department, made at the Butte hearing, I respectfully refer the subcommittee to the hereinbefore mentioned exhibits A–1 and B–1 and to a further signed statement by Ventilation and Hygiene Engineer Walter J. Needham, marked "Exhibit C–1," herewith presented.

(The exhibits referred to follow:)

EXHIBIT A–1

THE ANACONDA CO.,
ANACONDA REDUCTION DEPARTMENT,
BUREAU OF SAFETY,
Anaconda, Mont., November 21, 1956.

In any operation such as the Anaconda reduction department many hazards and unsafe conditions can exist if a definite effort is not made to eliminate them. Here at the Anaconda reduction department we have a bureau of safety whose sole purpose is to make conditions as safe as possible for the men who work at the plant.

Seven years ago we organized departmental safety meetings with various employees of the departments attending. Today these meetings are part of our safety program and at each of these meetings we now have the union shop

stewards and the union safety committeemen plus other union employees. The chairman of each meeting is one of the departmental superintendents and a number of the safety department staff also attend these meetings. Records of these meetings are kept by the safety department with copies posted on each of the 38 safety bulletin boards located in all departments of the plant. Copies are also sent to the departmental supervisors and one copy to the mine mill union.

During the period from January 1, 1956, up to and including November 21, 1956, a total of 111 employees' safety meetings have been held. In these meetings union employees have made a total of 425 safety suggestions. Of these 425 suggestions, which include all those brought us in the November meetings, 320 have been completed. Many of the 105 remaining suggestions are either being worked on or have been completed but will not be reported as completed until the December meetings. Over half of these 105 are now completed. Also, during this same period there were 615 safety accomplishments reported at the departmental safety meetings. These 615 accomplished safety suggestions are completed safety suggestions from safety meetings plus suggestions from safety inspections made by members of the safety staff in conjunction with the departmental supervisors. Complete records are kept on all unfinished safety suggestions and every effort is made to complete them.

Departmental supervisors have been very cooperative in following through on the safety suggestions and they have cooperated very well in completing their safety suggestions. This has been a very successful program with the best of help from both management and departmental supervisors. Members of the various unions have also been very cooperative in this program and many have expressed satisfaction toward this program.

Centrally located on the plant is an emergency hospital, staffed 24 hours per day by trained first-aid attendants. All cases of injury and sickness on the plant are treated here. Complete records are kept on each individual reporting. If the cases reporting are beyond the scope of the emergency hospital nurse, the case is referred to St. Ann's Hospital, where treatment is given by one of the hospital doctors. We also treat home injuries of our employees. Whenever the injury or sickness is such that the man cannot come to the emergency hospital, the nurse is called and he answers the call on the plant in the plant ambulance, which is fully equipped to care for the patient. The ambulance is equipped with first-aid kits, splints, stretchers, pneolator, oxygen therapy unit, blankets, sheets, etc.

The safety office staff is composed of 5 people—myself, as safety engineer, with 2 assistant safety engineers in the field making regular safety inspections, recommendations, and handling the total safety program in the field; 1 man in charge of personal protective equipment, safety bulletin boards, and other duties of the safety department, and 1 clerk who keeps records and handles safety shoes, safety prescription glasses, and safety meeting records.

On the plant we have a centralized distribution system on all personal protective equipment. That is, when employees need respirators, goggles, hard hats, face shields, etc., they come to the safety office, where they are fitted and instructed how to wear the proper type of equipment for the job they are asked to perform. This equipment is loaned to each employee upon his signature. The equipment can be exchanged or renewed whenever the employee is in need of so doing.

When an employee is assigned a job and it is necessary to wear protective equipment, the foreman sends the man to this office where a trained attendant, familiar with plant conditions, outfits him with the proper protective equipment. A union representative at the Butte hearing stated than when needed the company furnished muzzles but that one could only wear a muzzle a certain length of time (transcript, p. 154). If the man is assigned to a job where prolonged wearing of protective equipment is necessary, he is allowed time periodically as he needs it to leave the job area where fresh air is available.

All of the usual protective equipment issued is of an approved type and all dust respirators carry an approval by the United States Bureau of Mines. All personal protective equipment which is returned is washed, sterilized, repaired, painted, and made ready for reissue in first-class condition. No used protective equipment is issued to employees until serviced by this department.

Specialized respiratory protective equipment is also available either in the department, emergency hospital, fire hall, or the safety office. We have airline respirators located in the fertilizer plant, lead shop, emergency hospital and safety office. All-service gas masks are located in the phosphate plant, fire hall,

emergency hospital and safety office. One industrial gas mask is located in the emergency hospital and four more are on order. Two of these are to be placed in the crane cab of the large converter cranes for emergency use and two are to be placed in the converter shop for use by repairmen in case of emergency. Two self-contained oxygen breathing apparatus are located on the fire truck at the fire hall.

A complete supply of protective equipment is kept in the emergency hospital for servicing the plant from 5 p. m. until 7 a. m. Otherwise, equipment is dispensed at the safety office.

A union witness at the Butte hearing, testifying about the presence of fumes in the phosphate plant, said they were so strong he has seen men pass out just like that [snapping his fingers] [transcript, p. 170]. The plant emergency hospital records for a period covering January 1, 1956, to October 30, 1956, have been completely checked. We found no cases of employees passing out due to working conditions or for any other reason in the fertilizer plant during this period. We did find that one man had gotten sick and was taken to St. Ann's Hospital from inhaling fumes from a special chemical added to the phosphate, which chemical is not being used now.

Butte hearing union representatives spoke of skin troubles emanating from employment in Anaconda plants. In our record we found that during the abovementioned period there were 38 cases of skin irritations reported at the emergency hospital. Each of these cases was checked with St. Ann's Hospital records, and it was found that only seven of these cases reported to St. Ann's Hospital. Of these 7, none of the cases was diagnosed as arsenic dermatitis and 2 were diagnosed as contact dermatitis. We had only two cases of skin irritation reported by employees of the dust treating department. These men did not lose time.

A union spokesman at the Butte hearing complained of employment at the Anaconda plants producing various conditions hereafter discussed. On November 19, 1956, I contacted Dr. Long, M. D., who is chief of the hospital medical staff at St. Ann's Hospital and the doctor directing all hospital cases involving our plant employees, regarding lung cancer, silicosis, dust, smoke, manganese poisoning and lead poisoning. Doctor Long told me that as far as he knew there were no cases of manganese poisoning. Doctor Long also told me that there were some lung cancer patients and that he had referred some to Galen Sanitarium for treatment. Doctor Long also stated that to his knowledge gained from experience and reading, that as yet there is no known cause of this condition. Many medical authorities, according to the doctor, blame smoking for lung cancer. As far as Doctor Long is concerned, there is no actual or real evidence to prove that lung cancer is caused by conditions which exist at the Anaconda plant.

Regarding silicosis, he said that in recent years he had not treated very many cases nor could he remember referring any to Galen. He also said that in the past few years there have been no new cases which he has had to refer to Galen.

Regarding lead poisoning, Dr. Long told me that to his knowledge there were no cases of this in the last 4 or 5 years.

It is Dr. Long's opinion that fumes from the zinc tankhouse, if harmful, would attack the respiratory system first rather than the teeth and stomach. To his knowledge, Dr. Long has not treated a stomach condition due to employment in the zinc tankhouse.

In checking our emergency hospital records we find that only two people were listed as being overcome by fumes during 1956. One of these is the above mentioned in the phosphate plant and the other was in the concentrator L. P. F. plant. Neither of these was serious or left any after effects.

We checked the dust-treating department as to how long employees have worked in this division. Prior to the 5-day week the average seniority date in this department was 1946, or a total of 10 years. Since the 5-day week, with the addition of 8 new men, the average seniority date is 1947, or 9 years working in this department. This information covers 100 men on the 6-day week or 108 on the 5-day week. We also found that there were 39 men who have worked 10 years, 30 men who have worked 15 years, and 19 men who have worked 20 years or better in the dust-treating department. These years of seniority are quite high compared to other departments at the plant.

A constant effort is being made by management, supervision, the hygiene and ventilation department, and the safety department to improve the safety and

health conditions on this plant and to make it a better and happier place in which to work.

DUNCAN MACDONALD,
Safety Engineer, Anaconda Reduction Department.

Name: Duncan MacDonald
Residence: 402 Hickory Street, Anaconda, Mont.
Age: 39
Education: High school
Experiences: Twenty years, the Anaconda Co.; assistant safety engineer, 1939 to 1950; safety engineer, 1950 to present time

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BUREAU OF SAFETY ACTIVITIES, 1955

The following is a report of the activities of the safety department and the emergency hospital for the year 1955.

Please note there were 179 lost-time injuries sustained by employees. Of this total, 101 were incapacitating injuries of 1 to 14 days lost time and 17 were incapacitating injuries of 15 or more days lost time. There was one fatal injury when an employee was burned and died as a result of these burns. This occurred in the roaster department.

The following is a compilation taken from the injury records for the past 10 years (1945 through 1954).

Year	Number of injuries			Man-shifts worked	Rate per 10,000 shifts worked			
	1 to 14 days lost time	15 or more days lost time	Total including fatals		1 to 14 days lost time	15 or more days lost time	Total both classes	Fatals
1945	76	53	129	802,588	0.95	0.66	1.61	0
1946	48	64	112	712,345	.67	.90	1.57	1
1947	71	66	137	803,737	.88	.82	1.70	1
1948	90	71	161	865,096	1.04	.82	1.86	1
1949	91	79	170	941,417	.97	.84	1.81	1
1950	79	71	150	956,600	.83	.74	1.57	2
1951	91	61	152	960,739	.95	.63	1.58	1
1952	94	71	165	982,868	.96	.72	1.68	1
1953	84	53	137	1,030,335	.82	.51	1.33	0
1954	72	55	127	867,226	.83	.63	1.46	1
10-year totals	796	644	1,440	8,922,951	.89	.72	1.61	9
1955	101	78	179	1,068,890	.94	.73	1.67	1

Our 1955 injury rate of 1.67 per 10,000 shifts is slightly higher than the 1954 rate of 1.46. The 1955 rate is also higher than the 10-year average of 1.61. Our injury rate from January 1 to July 31, 1955, was 1.39, which was quite good. We had a steady decline in personal injuries during that period. In the month of August we had a slight increase and from September through December there was a steady increase in the number of injuries.

At the writing of this report we have completely reorganized our safety program in an effort to combat this increase in personal injury to employees. We have an organized program of safety-training meetings for all supervisors, with definite emphasis on foreman training. A complete program of departmental safety inspection with each foreman has been set up. A revised program of eye screening for employees is being set up. This program is based on the orthorater and eye screening program which we purchased from the Bausch & Lomb Optical Co. and received here late in December. An executive safety committee was also set up in November. This committee is composed of top supervision of the major departments, the plant manager, and the safety engineer.

Credit must be given supervision and employees of the following departments for their 1955 injury rates. The departments have been grouped as to those which had no lost-time injuries for 1955; those which had injury rates below the total plant average rate; and those which had a lower injury rate in 1955 than they had in 1954.

Departments with no lost-time injuries during 1955

Concentrating manganese ore	Manganese kiln
Fire department	Watching department
Water supply	Lead shop
Paint shop	Engineering department
General laboratory	Research laboratory
Laboratory sample mill	Hotel department
Monthly employees	Salvage and parks
Water works	

Departments with lower injury rates than the 1955 plant rate of 1.67

Department:	*1955 injury rate*
Powerhouse	0.55
Purchasing department	.71
Chamber acid plant	.88
Foundry departments	.90
Dust-treating plants	.90
Concentrating copper ore	.96
Phosphate plant	1.08
Electric shop	1.08
Blacksmith, machine and tin shops	1.38
Pipe shop	1.39
Slag and tailings	1.40
Concentrating zinc ore	1.44
Total concentrating	1.19
Total acid and brick plants	1.29
Total phosphate departments	1.35

Departments which had lower injury rates in 1955 than in 1954

Department	1955 injury rate	1954 injury rate
Concentrating manganese ore	[1]	2.56
Lead shop	[1]	2.08
Watching department	[1]	1.40
Powerhouse	0.55	.68
Chamber acid plant	.88	3.11
Foundry departments	.90	1.40
Concentrating copper ore	.96	1.25
Phosphate plant	1.08	2.15
Pipe shop	1.39	1.64
Slag and tailings	1.40	1.72
Boiler, ironworkers, and welding shops	2.33	3.15
Local tram	2.58	2.81
Carpenter shop	2.61	3.20
Reverberatory smelting	3.33	3.69
Calcining copper ore	3.80	6.31
Total plant protection	[1]	.75
Total concentrating	1.19	1.32
Total acid and brick plants	1.29	2.59
Total phosphate departments	1.35	1.95
Total mechanical departments	1.67	1.76

[1] No injuries.

The annual eyesight and hearing examinations were conducted during March and April. We examined the eyesight and hearing of all employees operating or working with mobile equipment such as truckdrivers, engine drivers, switchmen, crane operators, hoist operators, caterpillar operators, pay-loader operators, forklift truck operators, etc. The following is a summary of the results of these examinations.

Number of employees who were not wearing glasses and passed	256
Number of employees who were wearing glasses and passed	80
Number of employees who had to procure glasses to pass the examination	7
Total examined	343

Nine men were sent to the eye doctor in town for a recheck eye examination.

There were 116 departmental safety meetings conducted throughout the plant. These meetings were attended by employees of the departments, union safety committeemen appointed by the union, the safety engineer, and conducted by one of the top supervisors in the department. These meetings were held once per month in each department and lasted from 1 hour to 1½ hours. The safety engineer presented short talks and led discussion periods on some phase of safety at each of these meetings. At several of these meetings short safety demonstrations were also given.

The following is a summary of activities of the departmental safety meetings held during the year 1955.

Department	Number of safety items suggested at meetings	Number of accomplishments reported at meetings	Number of suggestions uncompleted
Acid and brick plants	7	14	0
Concentrator	75	135	12
Dust treating department	32	32	9
Ferromanganese	12	18	2
Foundry	43	44	3
Fire and watching departments	3	2	1
General laboratory	3	2	1
Laboratory sample mill	11	8	3
Local tram	20	9	6
Manganese kiln	0	0	0
Mechanical departments	31	30	4
Phosphate	45	58	12
Research	0	0	0
Slag and tailings	2	3	0
Smelting department	37	28	13
Sponge iron	3	3	0
Surface and garage	20	18	1
Zinc plant	61	51	10

There was a total of 405 suggestions made by employee representatives attending these meetings. Of these 405 suggestions, 328 have been completed, while 77 are yet to be done. A large percent of the remaining 77 suggestions to be completed were the result of meetings held in December.

There was a total of 455 safety accomplishments reported in these meetings. Records are kept on each safety meeting and copies are also posted on the safety bulletin boards located in 37 different locations throughout the plant. Copies of the minutes of the meetings are sent to department heads and a copy is kept on file in the safety office. A complete file on all safety meetings since 1950 is retained in the safety office. Both supervision and employees have cooperated very well in handling and attending these safety meetings. Many worth while safety items have resulted from the meetings.

Nine foreman meetings were held during 1955. Attending these meetings was approximately 75 percent of the plant foremen. These meetings were devoted to the improvement of safety conditions and unsafe practices throughout the plant. As of January 1, 1956, a complete new foreman training meeting program was inaugurated. These meetings will be held each month and will continue through 1956.

Our program of making available safety glasses ground to the individual's prescription, at a very nominal cost to the employee, was very well received in 1955. Employees purchased 161 pairs of safety glasses in 1955, making a total of 930 pairs of safety glasses purchased by employees since the beginning of the program. The average cost of safety prescription glasses, including the examination fee, is $15 per pair. This program has not only helped to cut down on eye injuries, but because of the reasonable cost to employees it has placed eye correction on many employees who would not otherwise have been wearing glasses. Because of this program the average visual acuity of our employees is much better. Employees purchased 60 more pairs of safety glasses in 1955 than was purchased in 1954. During the year 1955 we did not have a loss of a single eye to any employee. I believe our corrective-protective program has been a contributing factor to the success of our eye-protection program.

Our safety-shoe program, which has been in operation since October 1952, was very successful in 1955. During the past year our employees purchased 1,812

pairs of safety shoes, making a total of 5,151 pairs of safety shoes purchased by the Anaconda reduction department employees since the start of the program. Our employees purchased 695 more pairs of shoes in 1955 than they did in 1954. Because of this program out toe injuries have reduced considerably. Several reports have been made to this office by employees to the effect that their safety shoes had prevented serious toe injuries. Safety shoes are purchased by the employees at 5 percent below cost. This program has not only made available good work footwear but has contributed considerably to a better employee-relation program and safety education.

Much emphasis was placed on the wearing of hard hats. We placed approximately 400 hard hats on various employees. This program is also operated on a voluntary basis, with hard hats being furnished to any employee without cost to him. The hats are issued on signature only.

Regular safety inspections of all departments were conducted by the bureau of safety staff, accompanied by the departmental head. Many additional inspections were made by our staff. Unsafe conditions and practices were noted and discussed with the supervisor of the department inspected. Corrections were then made to eliminate these conditions and practices which might contribute to an injury. We also work very close with the construction department in recommending and designing safety equipment and devices on all hazards arising from construction. The construction department has cooperated very well with this department by applying all safeguards to construction jobs before turning over to the operating department.

The following items are issued from this office, either to the employee on his signature or to the department whenever necessary:

Dust and gas respirators	Hard hats
Goggles of various styles	Dust hoods
Red and blue flags	Safety belts and ropes
Face shields	Emery-wheel guards
Leggings	Ladders
No-fog for glasses	Repair parts for safety glasses
Metatarsal foot guards	Outer shoes for hot jobs
Interliners for hard hats	Welding personal protective equipment

I attended all of the supervisors meetings held by Mr. Emanuel. I discussed the previous monthly injury rate and at several of these meetings I presented special programs on safety.

Our program of examination of all applicants for switching and driving in the local tram department is still being followed. New employees assigned to the train service must first report to the safety office for an eyesight and hearing examination and at this same time he is presented with a brochure covering the rules and regulations. This type of program has helped in our relations with these men and also gives them a better and safer understanding of their job.

We are still continuing to give personal instruction to all employees assigned permanently or temporarily to jobs in the dust-treating departments. These instructions cover proper clothing to wear, protective equipment, personal cleanliness, and the proper care of one's body. This program has worked wonderfully well in the prevention of skin irritation to employees.

In cooperation with supervision of the converter and casting department this department made up complete posters on a newly adopted signal system for cranemen and ladle chasers. These signal posters were placed in all cranes and in all change houses in the building. The signals were also placed in a new rule book which was also put into practice at the same time. The rule book is a small, pocket-size book covering the basic safety regulations for above-mentioned department. When the signal system and regulations book were put into effect all employees were called into group meetings and instructions on these items and other safety problems discussed. These meetings covered better than 95 percent of the employees in the converter and casting department. The setting up of this program has improved the feeling between cranemen and floormen and has made a much safer and more efficient crane and converter operation.

During the entire year of 1955 we maintained 38 safety bulletin boards. This is four more than we had the previous year. Every department has at least one safety bulletin board and some of the larger ones have several boards. These boards are serviced once per week by a member of the safety department staff, and display only safety material and various notices and posters from the employees club. Most club programs are posted in these boards. We are

also still using the five-panel Elliott bulletin board in the No. 1 change house. This board has a daily news service and a weekly safety poster service.

Due to the difficulties experienced in the roaster building a compulsory program of wearing high-top safety shoes, fireproofed coveralls, and fireproofed hoods which cover the head, face, and neck, was inaugurated. Each employee furnished his own footwear whereas the coveralls and hoods are furnished by the department. This alone has prevented many injuries from burns.

The emergency hospital activities were of a routine nature, with 6,119 cases of injury and sickness treated. Not all of the injuries treated originated on the plant. Many home injuries are also treated here. Last year we reported that the emergency hospital needed new floor covering. This job has been completed along with painting. This unit is now in first-class condition.

We have located in the plant 28 emergency first-aid units, and 23 additional stretchers. These units have been completely reserviced and the boxes painted. This places all of these units in first-class condition. All other special safety equipment such as acid hoods, gas masks, safety belts, airline respirators, etc., located in the various departments, have also been completely reserviced and are ready for use at any time of the day or night.

DUNCAN MACDONALD, *Safety Engineer.*

EXHIBIT B–1

THE ANACONDA CO.,
ANACONDA REDUCTION DEPARTMENT,
Anaconda, Mont.

From: Ventilation and Hygiene Division.
Subject: Walter J. Needham, age 60, high school and 1 year in architectural engineering at Montana State College.

Training: Four years (May 1923 to May 1927), United States Bureau of Mines, Health and Safety Branch; 10 years (May 1927 to May 1937), safety engineer, Great Falls reduction department, the Anaconda Co.; 13½ years (May 1937 to October 1950) safety engineer, Anaconda reduction department; 6 years (October 1950 to date), ventilation and hygiene engineer, Anaconda reduction department, the Anaconda Co.

Duties: The supervision of and active participation in our program of promoting a healthful working environment for our employees. This assignment includes:

(1) The design and installation of mechanical equipment and natural ventilation equipment for the evacuation of gases, fumes, and dusts from working areas.

(2) The collection and analysis of samples of gases, fumes, and dusts.

(3) The provision of cooling units to improve environmental conditions.

(4) To provide adequate washroom, locker, and other sanitary facilities for all employees.

(5) To do such other incidental tasks which may be pertinent to our overall health program, as they are assigned by management.

The ventilation and hygience division at this plant was inaugurated in 1943 and during that year, in cooperation with the industrial hygiene division of the Montana State Board of Health, the initial survey of the plant was made. Since 1943 many of the members of this State department have visited the plant and they have been given full cooperation and assistance in completing their assignments.

The standards ("threshold limits") which are our guide for the control of contaminants are those which are generally accepted by industry. These standards are established by a group of recognized authorities in the industrial hygiene field who, as a body, are called The American Conference of Governmental Industrial Hygienists. These same threshold limits are also standard for the Montana State Board of Health. The governmental hygienists define "threshold limit" values as "the maxumum average atmospheric concentration of contaminants to which workers may be exposed for an 8-hour working day without injury to health." (Complete statement is on p. 186 of Archives of Industrial Health, August 1956.) The above standards are based on the premise that no respiratory protective devices are worn.

On most work assignments in contaminated areas at this plant, the work day is completed in a lapsed time of much less than 8 hours which allows rest periods in fresh air. In calculating exposure to contaminants, recognition of these fresh-air rest periods is considered and "weighted average exposures" are used. A weighted average exposure is the concentration of the contaminant multiplied by 8 (hours) and divided by the number of hours of exposure to the contaminant.

Respiratory protective devices of the best quality (and, when procurable, as approved by the U. S. Bureau of Mines) are furnished to our employees on a loan basis and there is no program of economy in the furnishing of replacement filter media for these devices. One of our continuing problems is to convince many of our employees who work in contaminated or disagreeable atmospheres that they should use these protective devices. (Mr. MacDonald of the safety department explains the distribution and care of this equipment in his notes.)

Our company is one of the original group of members and a regular contributor to the Industrial Hygiene Foundation which was formed about 1935 as the Air Hygiene Foundation. This group sponsors the advancement of knowledge regarding industrial hygiene in the United States.

For the past 3 years the ventilation and hygiene division has had the help and advice of the previous ventilation engineer, the plant engineering department, and the Butte Ventilation Department staff.

Dated this 21st day of November 1956.

WALTER J. NEEDHAM,
Ventilation and Hygiene Engineer,
Anaconda Reduction Department, The Anaconda Co.

EXHIBIT C–1

THE ANACONDA CO.,
REDUCTION DEPARTMENT,
Anaconda, Mont.

STATEMENT OF WALTER J. NEEDHAM, VENTILATION AND HYGIENE ENGINEER, RELATIVE TO ORAL STATEMENTS MADE BY MEMBERS OF ANACONDA MILL AND SMELTERMEN'S UNION BEFORE THE SUBCOMMITTEE ON EDUCATION AND LABOR OF THE HOUSE OF REPRESENTATIVES OF THE UNITED STATES AT A HEARING HELD IN BUTTE, MONT., DURING SEPTEMBER 1956

It should be recognized by any properly informed and fairminded person that in the production of copper and zinc metal from ore to refined product, of phosphate fertilizer from rock to the marketable products, of ferromanganese from ore to final product, the production of bricks and sulfuric acid, and many miscellaneous activities combined with the above, that waste products in the nature of smoke, dust, and gas are generated. These waste products may often be present in quantities where they constitute only a disagreeable condition rather than a hazard. Locally, there is a proneness on the part of many misinformed people to make a blanket indictment of all disagreeable atmospheric conditions as positively hazardous.

Management and the industrial hygiene division at this plant are alert to the fact that there are many undesirable conditions which need to be corrected. Work is progressing on them as conditions will permit. The amount of money which has been spent to improve working conditions in past years is not known, but it may easily be estimated in hundreds of thousands of dollars and perhaps more.

A union witness at Butte made a reference to hydrogen sulfide which he said builds up in the system and eventually gets you as being present in the plant (transcript, p. 134). Our departmental records and a conference with our director of metallurgical research reveal no operation where this gas is generated. In our general laboratory, hydrogen sulfide is used for gassing samples. It arrives in steel cylinders. The cylinders and the samples are under a special exhaust hood. This hood is connected to a special fan.

At Butte the subcommittee was told that fumes from the zinc tankroom ruined teeth and were hard on the stomach (transcript, p. 172). The same witness said the only ventilation in the building came through windows (transcript, p. 173). More efficient cooling of the electrolyte and the use of lead-silver anodes in recent years have minimized the generation of sulfuric acid mist from the surface of the tanks. Even prior to these improvements a representative of the

State board of health, with our full cooperation, ran exhaustive tests in our tankroom. The summary of Mr. Wallach's report (sent to us in January 1951) states that the gauze masks which most of the tankroom employees use are efficient protection against sulfuric acid mist. Since the improvements have been made some of the employees choose not to wear the gauze masks. Others use them intermittently. Statement that the only ventilation in the tankroom is through windows is in error. As permitted by climatic conditions, large window and door areas are left open. When it is cold it is essential that the building be closed more tightly. At all times natural roof ventilators induce the movement of fresh air through the building. During the winter months one fan introduces warm fresh air into the building. The zinc tankroom is generally considered a very good place to work. The stripping of the zinc cathode sheets is on a quota basis and the superintendent of the electrolyzing division states the average time consumed by strippers in completing their quota of work does not exceed 4 hours.

A union witness speaking at the Butte hearing referred to the tall shed (aging shed) where he works as having for ventilation only a small opening at the top and a couple of windows (transcript p. 146). The aging shed is built in two sections which are interconnected. Over each area are long natural draft ventilators. They are directly over approximately 75 percent of the storage area. Except for the operation of the cranes, which move the product in the respective bays, there is little work required in the aging sheds. On the "old" side an air-conditioning system, which was installed in the crane cab, was not popular with the operators because it "blew on their necks." On the "new" side there seems to be some difference of opinion among the operators as to whether or not the air-conditioning in the crane cab is wanted. Doubtless, as a result of individual feelings, the glass and sash have been removed from the old crane cab on several occasions and a large portion of the Plexiglass has been removed from the new crane cab. The first mentioned witness also referred to dust in the "wring row" building, doubtless meaning the ring roll operation (transcript, pp. 157–8). This has been a dusty operation and the dust has been hard to control. Yet, some very good improvements have been made of recent date. The superintendent of the phosphate department has been working on the problem of installing a more tightly enclosed circuit. Twenty-five fans exhaust approximately 140,000 cubic feet of air per minute from the phosphate department operations.

Mention has been made of arsenic burns. In addition to instructions on personal cleanliness and the provision of special protective equipment, it must be stated that in the arsenic departments proper sanitary facilities are provided which are restricted to the use of arsenic department employees. This is in line with our general policy of providing the best of sanitary facilities for our employees. Adequate change houses with steel lockers and the best of toilets and showers are provided. Our 3 change houses, which have most recently been completed and which contain 168, 276, and 532 lockers, respectively, are completely air conditioned. Several others have a forced fresh air supply. A transition of all water fountains in operating departments to special stainless steel models hs been underway and continues to date.

Dated this 21st day of November 1956.

WALTER J. NEEDHAM,
Ventilation and Hygiene Engineer,
Anaconda Reduction Department, The Anaconda Co.

SUPPLEMENTAL STATEMENT OF W. E. MITCHELL

THE ANACONDA CO.,
ANACONDA REDUCTION DEPARTMENT,
Anaconda, Mont., November 28, 1956.

Mr. J. T. FINLEN,
Western General Counsel,
The Anaconda Co.,
Butte, Mont.

DEAR SIR: Supplementing my written statement of even date herewith for presentation to the Subcommittee on Education and Labor of the House of Representatives of the United States constituted by the 84th Congress, I submit, for presentation, additional information, as follows:

Section 23 of the 1955 contract with the Mine-Mill Union reads as follows:

"Safety: Safety shall be a basic responsibility of each employee and the company.

"A safety committee will be established in each department consisting of 2 employees selected by the union and 2 company representatives. The safety committeemen, in addition to their regular work, shall have the duty of promoting safe methods of work and working conditions and making recommendations in connection therewith. The safety committeemen shall be selected and operate on the same basis as the department steward."

The safety engineer of the company has had considerable difficulty in getting a list of union committeemen in many of the departments of the reduction works, and at this late date he is still unable to get complete representation of the union committee members for this service.

The union members on the negotiating committee were very anxious to secure this safety clause in the contract, but subsequently apparently lost interest and failed, in part, to avail themselves of the privilege granted them by the contract.

Anaconda union representatives complained at the Butte hearing of having to labor in a relatively high temperature in the tank room at the reduction plant. While such employees worked only intermittently during the course of a shift, to eliminate this physical exertion performed in daily service by changing sheets in the tanks, in the year 1951 the company offered to install power hoists to perform mechanically what the men do manually.

An appropriation was approved by management to effect this expensive conversion. However, the union feeling, no doubt, that while the conversion would reduce manual labor in the tank room to a minimum, it might also reduce the number of employees necessary there, refused to accede to the conversion, although subsequently, upon other occasions, the company renewed its offer to convert, the union continues to refuse to agree.

Sincerely,

W. E. MITCHELL.

STATEMENT OF FLOYD S. WEIMER, MANAGER OF THE GREAT FALLS, MONT., REDUCTION DEPARTMENT OF THE ANACONDA CO.

Mr. WEIMER. My name is Floyd S. Weimer, of Great Falls, Mont. I make this statement for the information of the subcommittee of the Committee on Education and Labor of the House of Representatives of the United States to supplement the information received by the subcommittee on September 17, 18, and 19, 1956, at Butte, Mont., in visiting the underground workings of the Kelley mine, the central compressor plant, the ventilation research laboratory, the Berkeley pit, the precipitating plant, underground workings of the Mountain Con mine, the surface plant areas of the Anaconda Co., and by unsworn witnesses testifying at a hearing in the Federal Building at Butte, Mont.

Since 1953 I have been and now am the manager of the Great Falls, Mont., reduction department of the Anaconda Co., residing at Great Falls, Mont., and previous to my appointment as such manager I received formal education and was employed by said company as follows:

Graduated from Purdue University in 1917, receiving the degree of bachelor of science in chemical engineering.

Thereafter, commencing on November 26, 1917, I worked for said reduction department as a laborer in the zinc plant until December 1917, when I was employed in the research department of said plant as a chemist until February 1918, when I was employed doing dust and gas research work in the reverberatory zinc roasters of said plant until January 1919, when I was employed as assistant foreman of the zinc electrolyzing in said plant until March 1920, when I was employed

as a chemist in the zinc research department of said plant until August 1920, when I was employed as general foreman of the zinc plant of said department until January 1923, when I was employed as superintendent of zinc casting in said department until May 1924, when I was employed as a research engineer in said department, working upon acid leach and the treatment of purification cake until February 1925, when I was employed as assistant to the leaching plant superintendent of said department until May 1927, when I was employed as research engineer in the research department until later in 1927, when I was employed as an engineer for the Electrolytic Zinc Process Co. and sent to Poland, Norway, and Italy, until 1930. Thereafter, I was employed by the Anaconda Co. as a research engineer in the Great Falls reduction department until 1933, when I became superintendent of the zinc leaching department in said plant until 1935, when I was employed as assistant superintendent of the zinc plant in said department until later in 1935, when I became assistant superintendent of Anaconda Wire & Cable Co., operations in said department, until 1937, when I became assistant general superintendent of said Great Falls reduction department, becoming general superintendent of such department in 1941 and continuing as such until becoming manager thereof in 1953.

I was born October 18, 1895.

It appears that the matter of health or safety in a surface plant such as the Great Falls, Mont., reduction department of the Anaconda Co. is not within the purview of the inquiry which the subcommittee was appointed to make but in that union employees of such department made statements relative thereto at the September hearing in Butte, Mont., and in that the chairman of such subcommittee has invited the views of management upon the subject, this statement is offered for the information of the subcommittee.

In view of the foregoing circumstances, we regret that the members of the subcommittee in attendance at the Butte hearing did not have opportunity to visit the Great Falls reduction department to observe firsthand the operations there.

While such operations are nowise as dangerous as operations in underground mines, it cannot be again said that they are nevertheless hazardous, just as railroading, logging, dirt moving, house wrecking, sawmilling, electrical installation and repair, steeplejacking, sandhogging, manufacturing with power-driven machinery, and numerous other operations and occupations are inherently and undeniably hazardous.

The purpose of this statement is to inform the subcommittee what the Anaconda Co. has done and is doing to meet the challenges presented by the inherent hazards of the Great Falls operations and also to correct mistaken impressions which might otherwise be received from incorrect statements made by persons who appeared at the Butte hearing.

The vice president of Great Falls Mill and Smeltermen's Union stated at the Butte hearing, in substance, that periodic safety meetings were held in the various departments of Anaconda's Great Falls plants, where unsafe practices were "brought up at these meetings and on the whole they were pretty well taken care of" (transcript, p. 419). Another Great Falls union representative declared at the Butte hear-

ing: "Now I have to admit that I think the Great Falls management puts on one of the most elaborate safety first programs that I think any company does" (transcript, p. 415). The same union representative, speaking of the doctor and hospital arrangement for the Great Falls workers, said: "Personally I like it myself and I think most of the members there do too * * *" (transcript, p. 410).

For further information in connection with safety first, I submit herewith information in exhibits as follows:

Exhibit A2: Letter explaining safety meetings procedure in all departments of the Great Falls plants;

Exhibit B2: January 1956 announcement by management relative to safety first program;

Exhibit C2: Memorandum regarding Holmes Safety Association certificate of honor;

Exhibit D2: Copy of monthly safety inspection reports for each of the 3 months immediately preceding September 1956 Butte hearing.

In that no complaint has been made by any source pertaining to accidents or safety first at Great Falls, let us turn our attention to ventilation and allied problems.

Marked "Exhibit E2," I submit herewith memorandum setting forth the qualifications of John C. Reynolds, our industrial hygiene engineer.

Management and employees have dust to cope with in the concentrate unloading and roasting department. However, silicosis is not involved. I have never known of a case of silicosis originating or developing because of employment in this department. The department does not receive ores, it receives only concentrates, and the latter contain but approximately 2 percent silica. Further, when the concentrates are received they give the general appearance of damp sand, and upon this subject I submit herewith exhibit F2, being a report to me from John C. Reynolds of the Industrial Hygiene Department.

Evidence was presented at the hearing in Butte of the tragic death a number of years ago of four men and like number being stricken upon the same occasion. The subsequently determined cause was deadly arsine gas in the zinc leaching plant. A union witness at Butte stated that immediately after the accident "* * * management went to great expense to make sure this did not happen again if they could help it" (transcript, p. 413). At another point in his statement the same witness said: "* * * I have to admit that I think the company went to extremes to try and stop it" (transcript, p. 414).

Elsewhere in the record made at Butte the subcommittee was told that one Rex Blackorby (spelled Blackby in the transcript) quit his job in this section of the plant due to ill health, and the inference was left that thereafter he died under circumstances suggesting arsine gas as the cause (transcript, p. 414).

There is no company record whatever of Blackorby ever having been gassed, or ever having claimed to have been gassed at the Great Falls plant or elsewhere.

The pertinent facts concerning Blackorby are: He quit Anaconda, never again to be employed by it, on November 27, 1946. According to the company record (exhibit G2 presented herewith), he assigned going into business for himself as the reason for his quitting. Whereupon, he actually did go into the tavern business and thereafter worked

as a bartender. At the time of his death on September 12, 1956, almost 10 years after leaving employment by Anaconda, he was a bartender for the Elks Club in Great Falls, Mont. (See newspaper accounts of his life and death furnished herewith as exhibit H2.)

According to the certificate of his death (presented herewith as exhibit I2), he died of carcinoma of the right lung of 6 months' duration.

Concerning our arsine-gas-detection devices and program, I submit herewith exhibit I2.

As regards temperature, a union employee made a statement at the Butte hearing that out of about 80 men employed in the electrolytic copper refining plant at Great Falls about 5 men per day did not show up for work. He said there was in the plant a lack of ventilation and that for the last 5 years the men have been requesting air conditioning. The informant further volunteered that "* * * management a couple of years ago went to great expense in installing a 2-foot pipe across the ceiling and some of these outlets down into the basement and connected on to fans," but that the temperature was still such that last summer the men themselves agreed to start work at 5 in the morning rather than 7:30 to have 2½ hours of cooler weather in a shift (transcript, pp. 414, 417).

Replying to the foregoing statement concerning starting work at an earlier than usual hour in the morning, I submit herewith the signed factual statement of L. J. Ingvalson, assistant general superintendent of the plant, dated November 19, 1956, and minutes of the safety meetings in the plant held during June, July, and August, 1956, the 3 warmest months of the year, all marked "Exhibit K2."

With reference to the charge that employees in the plant were losing shifts due to extreme temperatures, I submit herewith a signed statement (exhibit L2) by the general superintendent of the Great Falls works, dated November 15, 1956, showing that for the warmest 3½ months of 1956 (June, July, August, and the first half of September) absenteeism was less percentagewise in the copper refinery than in the whole Great Falls plant, and was only 2.57 percent from all causes in the refinery in the face of the union witness' estimate of 6.25 percent in the refinery due to temperature alone.

The ventilating in this department presents some problem in that the purpose of the tankroom, the operation of our copper cells, must be carried on with a relatively hot solution. Because of this, any attempt to completely ventilate this department with cold, fresh, outside air is out of the question. The room has a capacity of 6,800,000 cubic feet. Our present two fans have a capacity of approximately 37,000 cubic feet of air per minute. We are, therefore, presently theoretically changing the air in this department once every 3 hours.

Regarding the very marked improvements made in the copper refinery to improve temperature, and comparing temperature conditions prevailing there after installation of the improvements with conditions there prior to such installation, I submit herewith exhibit M–2, prepared by Anaconda's industrial hygiene department.

Complaint was made by a union witness at the Butte hearing of smoke in the zinc-casting plant, causing men to have sick stomachs and to lose shifts. The witness stated that the men have tried to get

the company to extend the stacks over the furnaces to improve the situation (transcript, pp. 420–425).

There is a smoke or ventilation problem in the plant, and while it can be unpleasant at times, I have never known it to cause sickneses or loss of worktime. As a practical matter, the situation could not be remedied by extending the stacks over the furnaces. However, for information as to what the company has done and proposes to do about the matter, I submit herewith a number of reports entitled "Exhibit N–2." For the further information of the subcommittee there is presented herewith as exhibit O–2 photographic copies of the minutes of the seven safety meetings of the zinc-casting plant held in June, July, and August, 1956, and of the safety metings of the zinc-roasting plant during such period.

(The exhibits refrred to are as follows:)

EXHIBIT A–2

NOVEMBER 20, 1956.

Mr. C. V. SAYLOR,
General Superintendent

DEAR SIR: Following is the information you requested regarding safety meeting procdure, frequency of meetings, attendance, and other relative information:

Safety meetings are held regularly in all departments at last once a month. All zinc plant department meetings are held every 2 weeks. The meeting dates, together with the list of names of the men who are to attend, are posted on the department bulletin board at least 1 day prior to the meeting. In the larger departments the superintendent or foreman carefully schedules the crew so that each man on the crew is assured of attending as many meetings per year as possible. In the case of smaller departments it usually works out that each man on the crew attends from 4 to 5 meetings per year. Shop stewards on day shift attend all meetings.

The meetings are normally conducted by the foreman who calls the meeting to order, reads the minutes of the previous meeting and then asks for additions or corrections to the minutes as read. Disposition of unfinished business or previously reported items are discussed and reported on. The men present are then individually called upon to report anything of an unsafe nature whether it be an unsafe condition or an unsafe practice. Quite often the superintendent gives a short talk on specific safety problems peculiar to that department.

The safety engineer or his assistant attend all meetings and give talks on accident prevention and general safety. These talks are frequently illustrated by "safetygraphs" or other material obtained from the National Safety Council or from other accident prevention agencies or publications. We frequently stress the fact that unsafe conditions and practices should be reported as soon as possible and not held back until safety meeting day. We also make an effort to pass along information on home and highway safety, new developments in first-aid and new safety equipment available. Before closing the meeting the men are again asked for further suggestions or discussion after which the meeting is adjourned.

The minutes of these meetings are typed and copies are sent to the department superintendents and Larry Mower, executive secretary of the Mine and Smelterman's Union.

Yours truly,

C. T. BORGREEN, *Safety Engineer.*

EXHIBIT B–2

THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont.

SAFETY FIRST PROGRAM FOR 1956

To encourage and reward safe-working departments of this, the following practices will be continued:

1. Treats will be awarded to any department accumulating its first 10,000 consecutive man-days without a lost-time accident.
2. Treats will be awarded as usual on the anniversary of an accident-free year in any department.
3. To further the incentive for continuing the accident-free record beyond the first 10,000 man-days reached in any department, a treat will be awarded for each adidtional 5,000 man-days attained. Any department now holding an extended record will continue to earn treats at the same rate already established, but at 5,000 man-day intervals.
4. And, for the first time this year, an award will be made each month to the department showing the greatest improvement in accident rate over their rate for 1955. During the second 6 months of 1956, the rate for the first 6 months of 1956 will be used for comparison. To provide incentive to as many departments as possible, this award will not be made to the same department for consecutive months.

"Spectacles must be worn" areas will continue to be designated around the plant where this practice must be observed at all times. "No exceptions."

A new safety first bulletin board will be erected at the main entrance to the plant which will be posted weekly showing the standings of all departments in number of man-days since last lost-time accident. The accident rate for the entire plant will be posted monthly and compared to the rate for the past 25 years.

Safety first meetings will be continued on the same basis as at present, where safety suggestions may be presented and past accident reviewed. Attendance will be so arranged that every man will have the opportunity to attend at least one meeting during the year.

Interdepartment safety inspection trips will continue for supervisors and the safety engineer in an effort to correct any unsafe conditions in the plant.

THE MANAGEMENT.

JANUARY 30, 1956.

EXHIBIT C–2

THE ANACONDA CO.
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., November 15, 1956.

MEMORANDUM

Subject: Joseph A. Holmes safety association certificate of honor.
To: Mr. F. S. Weimer

Electric shop:	*Total hours*
Jan. 1, 1952, 1st award	697,136
Jan. 1, 1954, 2d award	993,072
Jan. 1, 1955, 3d award	1,114,134
Jan. 1, 1956, 4th award	1,331,304

The association is interested in obtaining safety records of mines, quarries, tunnels, petroleum, and metallurgical plants, individuals or other activities allied to mining which are worthy of consideration for awards. A minimum of 350,000 man-hours is required.

For supervising the work of the electrical shop without a lost time accident for total man-hours listed above, this award was made to Mr. Buergey the first three times and the last year to the department as a whole.

CLARENCE V. SAYLOR, *General Superintendent.*

EXHIBIT D-2

JULY 3, 1956.

Mr. C. V. SAYLOR,
General Superintendent.

DEAR SIR: The following departments were inspected during the month of June 1956 by the safety department and departmental supervisors together with observers from outside departments:

June 25. The copper refineries were inspected with Mr. Koza, Mr. Duggan, and Mr. Hatfield. Except for additional cleanup necessitated by window dismantling and repair work on roof and increased brickmason work on basement piers and large doors, the E. C. R. was in good condition. Several bad aisle floor sections were found but nothing else of a reportable nature was observed. It was suggested that a weekly routine check of all chains and tongs be made by the foreman. Yard cleanup was needed particularly along the east side of E. C. R.

The wooden sidewalk from the bluestone and silver room to the slime scales is deteriorating badly. Since fork trucks are being used to load silver slime and bluestone a concrete runway is badly needed here. The silver room was quite messy. Another garbage container is needed here. Large pieces of loose plaster in ceiling of purification should be removed and a different type of ceiling installed.

The furnace refinery was in fair shape. Additional cleanup still needed around Nos. 1 and 3 furnaces. Several hoses were found on floors and around the stairs at No. 3 furnace. Racks should be provided and hoses hung up when not in use. All the supports under the anode loading platform had been broken by an anode car. This platform was repaired immediately. The dock was in good shape. Holes are being repaired in dock floor but switch recesses should be more adequately covered. Dinky engines operating near the gasoline storage tank at south end of furnace refinery building creates an explosion hazard when tank is being filled.

June 26. The wire mill was inspected with Messrs. Hay, Arms, Seickman, Bateman, Hatfield, and Pellett. Both mills were in very good shape except for scrap banding found on floors of both mills. Much could be done by the men themselves in keeping their own working areas clear by picking up and disposing of this scrap banding and other scrap material. All items reported last month have been taken care of or still in process.

June 28. Zinc plant with Mr. Wever, Mr. Pellett, and Mr. Spohn. The track leading into the center of the tankroom has a very sharp curve. A portion of the fanroom will be removed to permit wider curve at this point. The tankroom was in fair shape except for the many hoses cluttering up floors and aisleways. The zinc casting was clean and fairly orderly. Considerable cleanup work has been done in the leach and more is in progress. Work has started on the installation of handrails along the Moore filters. The slippery condition around the dryers has been improved. The holes in the roof of the dryer shed have not yet been repaired and a considerable buildup of residue on walkway along the track inside the shed creates a slipping hazard.

Cleanup work and removal of much debris and scrap seems to be the big problem in the roasters. Work has started on the roof and some window work has been done. A bad rail was previously reported on trestle at the west end of the unloading shed. This has not yet been replaced. The planking on the floor of the trestle at this point is also bad.

June 29. The low-line shops were inspected in company with Mr. Hill and Mr. Cecil Cox. Many of the chain slings used in the machine shop are left on the floors around the machines. It was suggested to Mr. McCallum that an additional chain rack be installed in the west end of the shops for these slings. Shop was clean and fairly orderly. Pipe shop rather cluttered due to unusual amount of pipe-cutting operations. In the blacksmith shop cleanup and restacking of tools and materials necessary along the north wall of shop. It was reported that the top three tiers of steel in steel rack are too high for safe handling.

Boiler shop was in fair shape and congested condition greatly improved. Some of the welding shields in the center of the shop were full of holes and should be repaired. Carpenter, paint, and electric shops, O. K.

June 29. Boiler and compressors with Mr. Houghton. All departments very clean and orderly.

GENERAL

The concrete steps on rock wall along road south of E. C. R. badly deteriorated. These steps are very rarely used and should be taken out.

The parking lots at the general laboratory and the zinc plant are in very poor condition. Much more gravel is needed at both lots and on the paths leading to the lots. In wet weather the lots and paths are extremely muddy. More space should be provided between spacing timbers at the zinc plant lot where cars park bumper to bumper.

The old wooden stairway leading from the swimming pool to the low line is becoming very dilapidated and is much too big for the amount of pedestrian traffic now using it. A new stairway about one-third as big as the present one would be adequate for the present traffic. Grip-strut construction would be less expensive to maintain.

A very serious crossing hazard exists at the railroad crossing near the management garages. Cars leaving the plant going west are on a steep uphill slope as they approach the crossing. A vine-covered rock wall on the left side of the road and track obstructs the vision on that side. When the G. N. crew pushes flatcars in from the west, it is almost impossible to see the flatcars until the driver is committed to cross. Even when the switch crew places a man on the first flatcar it is very difficult to see approaching cars in time to stop. I strongly recommend that a more positive audible-visible warning device be placed at this crossing.

[Handwritten note: Perhaps this crossing should be a "stop" for all auto traffic both ways. ***.]

Yours truly,

C. J. BORGREEN,
Safety and Welfare Engineer.

AUGUST 2, 1956.

Mr. C. V. SAYLOR,
General Superintendent.

DEAR SIR: The following departments were inspected during the month of July 1956 by the safety department, the supervisor of the inspected department and a supervisor from an outside department.

The Anaconda Wire & Cable Co. was inspected by Messrs. Hay, Bateman, Briggs, and Brown July 17. Both mills were clean and orderly. At the time of the inspection, scrap banding was found on all floors in the departments. One reel buggy, in bad order, was ordered repaired. All other previously reported hazards were removed.

The boiler and compressors were inspected by Messrs. Houghton and Muzzana July 20. This department was clean and orderly.

The copper refineries were inspected by Messrs. Cadwell, McCallum, and Brown, July 24. Material and equipment is still being left on floors, in aisles, and on top of circulating tanks. There is still a need for day-to-day cleanup. Floor plates are still uneven in the south side of the billet casting. There is a broken handrail near No. 2 tap hole. Hose and tools were left lying around. The refinery dock is being cleaned up. Broken planks are being replaced between tracks and switch plates have been repaired. It has been suggested that an air hammer be used when barring out poling doors of furnaces. The present method is not too satisfactory.

The shops were inspected by Messrs. Hill and Traun July 27. The walkway in the west end of the machine shop was piled with finished work. The hook of the traveling crane was left at eye level in this aisle. (These hazards were immediately corrected.) As yet the steam pipe along the stairway to the new storage room in the pipe shop has not been covered. Mr. Leo Traun suggested that a sign reading "Operator must wear eye protection," be placed over the blacksmith shop grindstone. The boiler shop is being cleaned up more and more each month. In the carpenter shop there is a crosscut saw that does not start when the power is turned on. The operator must then crawl over the bench, take off the belt guard and kick the drive pulley to get action. The starting of this machine should be made more safe and efficient.

The zinc plant was inspected by Messrs. Balheiser and Brown July 30. Minor hazards in the tank room and zinc casting were ordered corrected at the time of inspection. The zinc leach basement needs a lot of cleanup. The chinook machine at the southwest corner of the BN has an unguarded drive belt. The

electrical switches that control the BN leach tanks and exhaust fans should be covered. The planking on top of the commercial acid tank should be renewed.

The zinc roasters were inspected by Messrs. Wever and Logan July 31. A loose handrail on a stairway at the west end of the roaster building will be repaired. A walkway will be built across the old converter flues to prevent men from falling through. Considerable repair work as well as cleanup has been completed in the roasters at this time. A stretcher, blanket, and dustproof stretcher case will be installed in the roasters as soon as the best location can be determined.

GENERAL

All the railroad crossings in the plant are rough. The roughest one is east of the boiler shop.

The handrail on the steps leading from the tram lunchroom to the electric shop is loose.

Oil and water on the floor of the secondhand warehouse has caused two men to slip. This water comes from the riverside pumphouse, is stagnant and should be drained away.

There is a blind corner near the general office and the parking area east of the boiler shop. Two near accidents have been reported at this spot and seem to be caused by the trees growing in this corner. It has been suggested that these trees be trimmed or removed.

Sincerely yours,

AL FRENCH,
Acting Safety and Welfare Engineer.

SEPTEMBER 4, 1956.

Mr. C. V. SAYLOR,
General Superintendent.

DEAR SIR: The following departments were inspected during the month of August by the safety department and departmental supervisors together with observers from outside departments:

The wire mill was inspected on August 21, with Messrs. Hay, Arms, Briggs, Seickman, Teague, and John Reynolds. All departments of both mills were found to be in excellent condition and nothing of a reportable nature was observed. All departments were very neat and orderly.

The zinc plant was inspected on August 28 and 29, with Mr. Wever. The arsine trains at the P. R. P. were checked and found to be O. K. The area around the outlet of the P. R. tunnel was quite messy and creates a slipping and tripping hazard for pipefitters climbing out of the tunnel and entering the P. R. at this point. Sewage water from the zinc leach runs in an open ditch from a point near the P. R. tunnel to the main stream of the waste water ditch. This is extremely insanitary and should be covered at least until it enters the main waste water ditch. An open and unguarded manhole was seen a short distance southwest of No. 12 door of the leach.

Cleanup is still the main problem in the entire leach. It has improved in some areas but much remains to be done. The BN basement is particularly bad. Holes in roof of residue dryer shed still not repaired. A broken handrail and floorboard was found at north end of the iron tank trestle. The gear drive on leach ball mill is unguarded. Unguarded V belt drive on neutral leach hoist winch.

The tankroom, casting and roasters were in fair shape and normal day-to-day cleanup is being taken care of. Nothing of a reportable nature observed in these departments. A very messy and cluttered-up condition exists at the rear of the east end of the Z. P. change house. Surface department equipment haphazardly stored here creates a hazard for men using the clotheslines in this area.

Boiler and compressors inspected on August 31 with Mr. Houghton and Mr. Worley. All departments in very good shape.

Copper refineries inspected on August 30 with Mr. Koza, Mr. Duggan, and Mr. Logan. The E. C. R. was exceptionally clean. Although several bad floor sections were observed the floor repair program is being well handled. It was reported that some of the short basement ladders are broken. These will be replaced. It is quite obvious that the men in the tankroom are cooperating in the effort to keep aisles clear of hoses and equipment.

Metal cover over sump in the silver room needs repair. Several other items previously reported here have been taken care of. Exposed steam pipes at steam trap in bluestone room should be covered as they are at arm level. Mr. Logan stated that he has a new type of acid-resistant insulation which he will try out on these pipes. Both rooms fairly clean and orderly.

The billet casting was in good shape, clean and orderly. The change which was made on the conveyor where the billets roll bosh conveyor has improved conditions at this point. A chain rack which was installed here is being used and greatly reduces stumbling and tripping hazards here.

Furnace refinery in good shape except around anode furnace. This area will be cleaned up further when repair work is finished. Many of the bad spots in the floors have been repaired and are now in fair condition. A rack to hold tap hole launder bars will be built for the protection of mold press operator when he stands there to control flow of metal in mold ladle launder. Broken and bent metal handrail at this point will also be repaired.

The dock was in very good shape. Floors repaired and switch recesses have been worked over.

Low line shops inspected on August 30 with Mr. Hill and Mr. Houghton. The machine shop floor is still congested with material and equipment to be worked on. New electrical cable should be installed on power hacksaw.

The boiler shop men complain of fumes from heating units and welding torches making them ill when windows and doors are closed in cool weather. They suggest that the suction fan which was taken out of the east end of shop be replaced.

The men at the carpenter shop again asked for crawl beam over large planer. This would make for safer handling of large timbers.

Pipe, paint, blacksmith, and electric shops O.K.

The floor of the steel shafting rack at the low line warehouse is cluttered up with steel shafting. I understand that much of this steel has been charged out to other departments but not taken away. This makes it awkward and dangerous for the warehousemen when working here. A special rack for this material would help greatly.

The boardwalk from L. L. garage to parking lot is very bad. The carpenters report that the loose boards cannot be renailed as the timbers under them are badly rotted.

[Handwritten note: Will be repaired.]

Yours truly,

C. T. BORGREEN, *Safety Engineer.*

THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., October 10, 1956.

MEMORANDUM

MESSRS. PORTER, MILLER, WEAVER, HAY:

Please see to it that the suggestions and recommendations for housecleaning and safety in your departments as listed in Mr. Borgreen's report of September 24, 1956, are taken care of at once and a report of completion or action taken sent in to me.

CLARENCE V. SAYLOR,
General Superintendent.

Copies to: Messrs. Weimer, Ingvalson.

EXHIBIT E-2

THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., November 19, 1956.

Subject: A statement of personal qualifications in the field of industrial hygiene.
To: Mr. F. S. Weimer, manager.

I was graduated from the Great Falls College in June 1949 with the degree bachelor of science. My major field of endeavor was in chemistry. While waiting to join the staff of the Great Falls Reduction Works I was employed first as a

laborer in various parts of the plant and then as a chemist in the general laboratory. I remained in the laboratory for about 2½ years and was then appointed industrial hygiene engineer for the Great Falls plant. I have held this position for the past 2½ years.

I was attached to the chemical warfare department during 1943 and 1944 at Fort Knox, Ky. We were employed in the development of war gas detection and decontamination on the divisional level. At that time individual protection had been highly developed but methods of protection and decontamination of large numbers of armored vehicles was needed.

In November of 1955 it was my pleasure to attend, with Mr. J. W. Warren, of Butte, and Mr. Walter Needham, of the Anaconda Reduction Works, the 20th annual meeting of the Industrial Hygiene Foundation which was held at the Mellon Institute in Pittsburgh.

A system of free interchange of ideas and knowledge exists between the industrial hygiene department at the Great Falls Reduction Works and the parent office in Butte, under the able direction of Mr. J. W. Warren, chief ventilation and industrial hygiene engineer for the Anaconda Co. In addition this department subscribes to publications related to industrial hygiene. One of these is a publication of the American Medical Association, Archives of Industrial Hygiene. The other major subscription is published by the Industrial Hygiene Foundation, the Industrial Hygiene Digest.

JOHN C. REYNOLDS.
Industrial Hygiene Engineer.

EXHIBIT F–2

THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., November 19, 1956.

INDUSTRIAL HYGIENE

Subject: Zinc plant roaster and unloading departments.
To: Mr. F. S. Weimer, manager.

The zinc plant roaster and unloading departments handle a wide variety of material, some of our own plant products, some from the Anaconda reduction works, some from the East Helena slag-treating plant and a number of zinc concentrates and zinc oxide fumes from outside sources. Ores from which zinc may be recovered are treated at concentrating plants and shipped to Great Falls as zinc concentrates. The average assay of these concentrates will be from 53 to 57 percent zinc, 30 to 32 percent sulfur, 4 to 7 percent iron, and approximately 2 percent silica. The balance is composed of a wide variety of other elements. The zinc concentrates form the bulk of material handled at the Great Falls plan, however, large amounts of zinc oxide fumes are also processed. These fumes will assay 70 percent or more zinc and contain negligible amounts of silica. From the above it would seem that silica is a contaminant of minor importance in the Great Falls operation.

Concentrates as received in Great Falls contain approximately 10-percent moisture which effectively controls the amount of dust produced in handling this material. The greatest amount of dust produced in the unloading department comes from the handling of dry materials such as the zinc oxide fumes and drosses, materials containing practically no silica, and the Anaconda reduction works calcine. We have found by observation that the men employed in the unloading are making full use of the dust respirators furnished them, thus reducing their exposure to these dusts to a reasonable level. We are using at this time the American Optical R–2000 dust respirator. The efficiency of this type of respirator is very high, the most recent evaluation to come to my attention holds a figure of 99.08 percent (A. M. A. Archives of Industrial Health, Methods for Evaluating Respiratory Protective Masks and Their Component Parts, author H. Gerald Guyton, B. S., and Frederick T. Lense, M. S.; Frederick, Md., pp. 246–249, September 1956, vol. 14, No. 3). Because of the nature of the material handled, and the large quantities handled the unloading department presents the most serious dust problem within this plant.

The roaster department is in much better condition, however, and the same type of dust respirator is issued and faithfully worn by the personnel. Those who will not avail themselves of this fine protection choose to wear the original gauze muzzle, which does afford a certain degree of protection and which may

be sufficient for some of the less dusty areas. The supervisors of the plant have tirelessly pursued a program of education and encouragement to replace the gauze muzzle with the respirator and we are slowly but surely succeeding in that effort.

Plans have been completed and some preliminary work started on a program whereby all material now received at unloading and processed at the zinc roasters will be handled by mechanical conveyor. Following is a brief outline of that program.

Materials received at the Great Falls plant will be removed from the hopper cars by mechanical shakeouts; an endless belt moving between the tracks and under the cars will carry the unloaded material to transfer points at which place the material will be dumped into appropriate storage bins. From here it will later be moved to the wedge roasters. The distribution of material to the roasters will be handled by a separate conveyor system. Dry and dusty material will be moved by enclosed chain or screw conveyor while the more easily handled zinc concentrates will be moved by a belt conveyor to the wedge roasters. The material will then be dumped into the feed bins which are located over the tops of the furnaces. These bins individually feed the furnaces by gravity. We are assured that any transfer point or any other installation which permits contaminating dust to enter the working atmosphere will be properly vented into an integrated ventilation system.

This program when completed will bring dust levels within these two departments to very low levels. The first unit of this system went into operation in November of 1953 in the zinc roaster department. I refer to the Fuller-Kenyon dust pump which has now nearly eliminated manual handling of flue dusts. This unit also has been instrumental in reducing exposures of the charge floor crew to flue dust products, which in the past has been quite high.

A great deal of work has already been done to bring fresh air into the working areas surrounding the wedge roasters and to control dust being produced in large quantities in some of the roaster operations. I refer you to a copy of a report previously made covering this subject, which I have enclosed.

JOHN A. REYNOLDS,
Industrial Hygiene Department.

THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., October 31, 1956.

INDUSTRIAL HYGIENE

Subject: A history of the ventilation of the roaster building.
To: Mr. F. S. Weimer, manager.

Following is a brief history of ventilation of the roaster building. Included in this consideration will be those installations which were not primarily intended to ventilate the building but do so in an indirect manner by reducing the total quantity of air needed and thus increasing the effectiveness of the existing installations. As an example, let us consider the baghouse fan. This fan ventilates the discharge end of the calcine coolers and the calcine screening operation, transporting the entrained dust to the baghouse. In the absence of that fan, air from the primary fans could not be utilized in this area without seriously contaminating the rest of the roaster building. On this basis, then, we may divide the ventilation equipment in the roasters into primary and secondary systems.

The first consideration then will be those installations, of which there are four, which deal with primary ventilation of the roasters.

In 1937 an installation was made to ventilate the operating floors of the wedge roasters up to the converter floor. This area is divided evenly east and west between two fans located on the ground floor of the building, below the furnaces. The fan on the east end supplies air to the east half and the fan on the west to the west half. These fans are special No. 7 Siroccos, each being driven by a 50 horsepower electric motor at 580 revolutions per minute and each producing 20,000 cubic feet per minute for a total of 40,000 cubic feet per minute within this system. Preceding the inlet of each fan is a humidifying section for summer operation. Each fan supplies air to its respective division by means of suitably arranged ductwork. Each terminal branch of this ductwork discharges through a floor grating, where the air is directed as needed by means of a portable, wedge-shaped diverter.

In 1925 another special No. 7 Sirocco was purchased for use in the ferromanganese operation and was later moved to its present position at the converter floor level. It is located in front of a doorway which opens to the outside in such a manner that outside air is drawn into the fan inlet. This position is just west of the operating floor and directly above the present Fuller-Kenyon dust pump. The capacity of this fan is 20,000 cubic feet per minute, and it discharges into a round duct which delivers the air to a rectangular duct which lies just above the floor level and travels from the west end to the east end of the furnaces. A damper-controlled outlet is located between each pair of furnaces which blows cool air from north to south; there are six of these outlets.

In 1938, a Raymond Bros. fan was installed on the east end of the converter floor to ventilate the discharge end of the calcine coolers, but was later moved to the operating floor below and in its place was installed a smaller fan of above 7,000 cubic feet per minute capacity. Ductwork was extended by means of a Y-connection to the calcine loading tunnel located below, on the ground floor. At the present time this fan, which is an American Sirovvo 4–0 picks up dust from calcine loading and from the calcine coolers. The fan discharges into the baghouse where the dusty material is entrained.

To supplement the primary air system is a portable Jay Axivane I16 fan of 1,600 cubic feet per minute capacity. This fan is used to provide cooling air to crews employed in rebuilding or repairing inside a wedge roaster. Air may be picked up at a floor grating air discharge and blown into the furnace working area. Flexible fabric tubing known as elephant trunk is used as ductwork for this application.

The secondary air system is comprised of 3 installations, 1 of which is the Raymond Bros. fan mentioned in a previous paragraph. This fan has a capacity of 10,000 cubic feet per minute and is attached by means of suitable ductwork to the discharge end of the calcine coolers and the calcine screening operation. The fan discharges into the baghouse where the dusty material is entrained. This installation was made in 1938 and the fan is located on the cooler floor just west of the calcine coolers.

In 1952 a 10,000 cubic feet per minute bifurcating-type fan was installed above and between the 2 flue dustbins located on the west end of the unloading bins. One ventilating pipe was dropped to a hood over the tram track at each dustbin, a Y-shaped duct then led to the fan. A damper control was installed in such a manner that the bin which was being unloaded received the full benefit of the ventilation provided by the fan, the other hood being closed off. This was instrumental in reducing contamination to the concentrate tramming crew. This installation remained effective until the Fuller-Kenyon dust pump was installed, which now handles the flue dust in an enclosed system.

The Fuller-Kenyon dust pump was installed during 1953, going into operation in November of that year. This pump transports flue dust from the Cottrells to furnaces Nos. 13 and 14 in an enclosed circuit. Flue dust is picked up at the Cottrells, circulated through the pump, then into the dust storage bin over the dust furnaces through 6-inch round pipe. The storage bins are vented through small bags made of standard baghouse material. The dust is then transferred from the storage bins to the furnace feed hoppers by means of air slides. It is this latter sequence of events that leads to the formation of dust, and presents serious difficulties. Dust occasionally plugs the air slides and these have to be opened by rapping, which in turn leads to the opening of leaks, large and small. The covers of the furnace feed hoppers must be made to open easily as the dust will occasionally pile up instead of flowing smoothly, thus covering the discharge opening of air slides. Flue dust must be air lanced to free this opening; this operation alone is capable of causing tremendous, though temporary contamination of that area.

The relocation of the air slide discharges within the feed hoppers has done much to eliminate this condition, which leaves the feed hopper covers. These have led to a large amount of experimentation without satisfactory solution as they still fit too loosely for effective dust control. This department feels that a whole new approach to the solution of this problem is necessary to make any progress. It is felt that air lances should be built into the slides, at the slide discharge and within the feed hopper in order that it would not be necessary to rap or to open a cover in the event of plugging. The feed hopper covers could then be bolted down tight. If all flue dust handling at the dustbins could be eliminated, the present installation could be moved over furnaces Nos. 13 and 14 and used in the same manner for which it was originally de-

signed. Of course, it would be necessary to discharge the bifurcating fan into a special bag to entrain the large amounts of dust picked up at the feed hoppers.

JOHN C. REYNOLDS,
Industrial Hygiene Department.

EXHIBIT G–2

ANACONDA COPPER MINING COMPANY
GREAT FALLS REDUCTION DEPARTMENT
GREAT FALLS, MONTANA

Date Jan. 3 1947

S. B. CHASE
Employment Agent.

Today I have Laid Off From The Z.P. Leaching Department

Name R. Blackorby P. R. No. 3293

Reason for Laying Off Quit Going into business for himself

Foreman's Estimation Work Fair

Last Day Worked Nov. 27 1946

Signed C.B. Sparks

FBS-D-SM 8-46 9008

EXHIBIT H–2

[Great Falls Leader, September 12, 1956]

DEATH CLAIMS R. BLACKORBY

Rex A. Blackorby, 51, 623 22d Street South, Elks Club bartender, died this morning at a local hospital following 6 months' illness.

Funeral arrangements will be announced by the T. F. O'Connor Co.

Blackorby was born March 1, 1905, at Elsberry, Mo., and worked for the Anaconda Co. here for 18 years. He was coowner with a brother of the R & J Tavern (now Ambrose's Hi-Ho Tavern) for 18 months and tended bars at several places before going to work at the Elks Club 4 years ago.

Blackorby played baseball here 25 years ago with the Smelter League and also was active in bowling circles. He was a member of Great Falls Lodge 214, BPOE, and Bartenders Local No. 609.

Survivors are the widow, Margaret; four daughters, Mrs. Robert Carter, Mrs. Jack Evans, and Gail and Patricia Blackorby, and a son, Leo K., all of Grant Falls; four brothers, Jess of Bremerton, Wash., and his twin, Ray, of Portland, Herb of San Antonio, Tex., and Roy of Seattle, and two sisters, Mrs. Stella Lane of Lansing, Mich., and Mrs. Netta Hendrickson, who lives in Montana.

[Great Falls Tribune, September 13, 1956]

R. BLACKORBY DIES, RITES SET FRIDAY

Funeral services for Rex A. Blackorby, 51, 623 22d Street South, Elks Club bartender, who died Wednesday at a local hospital, will be held at O'Connor's at 1:30 p. m. Friday with the Elks Lodge conducting their ritual. Burial will be in Highland cemetery.

Blackorby was born March 1, 1905, at Elsberry, Mo., and worked for the Anaconda Co. here 18 years. He was coowner, with a brother, of the R & J Tavern (now Ambrose's Hi-Ho Tavern) for 18 months and tended bars at several places before being employed at the Elks Club 4 years ago.

Blackorby played baseball here 25 years ago with the Smelter League and also was active in bowling circles. He was a member of Great Falls Lodge 214, BPOE, and Bartenders Local No. 609.

Survivors are the widow, Margaret; four daughters, Mrs. Robert Carter and Gail and Patricia Blackorby, and a son, Leo K., all of Great Falls; four brothers, Jess of Bremerton, Wash., and this twin, Ray, Portland, Herb of San Antonio, Tex., and Roy of Seattle, and two sisters, Mrs. Stella Lane, Lansing, Mich., and Mrs. Netta Hendrickson, who lives in Montana.

EXHIBIT I–2

STATE OF MONTANA — Birth No. 452

DUPLICATE-FOR CLERK AND RECORDER

CERTIFICATE OF DEATH

STATE BOARD OF HEALTH — Bureau of Vital Statistics — State File No. 25609

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE—PUBLIC HEALTH SERVICE

MEDICAL CERTIFICATION

1. PLACE OF DEATH: a. COUNTY	Cascade		2. USUAL RESIDENCE (Where deceased lived. If institution: Residence before admission) a. STATE	Montana	b. COUNTY Cascade
b. CITY, TOWN, OR LOCATION	Great Falls	c. LENGTH OF STAY IN 1b	c. CITY, TOWN, OR LOCATION	Great Falls	
d. NAME OF HOSPITAL OR INSTITUTION (If not in hospital, give street address)	Columbus Hospital		d. STREET ADDRESS	623 22nd St So	
e. IS PLACE OF DEATH INSIDE CITY LIMITS?	YES ☒ NO ☐		e. IS RESIDENCE INSIDE CITY LIMITS?	YES ☒ NO ☐	f. IS RESIDENCE ON A FARM? YES ☐ NO ☒

3. NAME OF DECEASED (Type or print)	First: Rex	Middle: A	Last: Blackorby	4. DATE OF DEATH	Month: Sept	Day: 12	Year: 1956		
5. SEX	6. COLOR OR RACE	7. MARRIED ☒ NEVER MARRIED ☐ WIDOWED ☐ DIVORCED ☐	8. DATE OF BIRTH	9. AGE (In years last birthday)	IF UNDER 1 YR. Months	Days	IF UNDER 24 HR. Hours	Min.	
male	white		3-1-1905	51	6	11			
10a. USUAL OCCUPATION (Give kind of work done during most of working life, even if retired)	Bartender	10b. KIND OF BUSINESS OR INDUSTRY	Elks Club	11. BIRTHPLACE (State or foreign country)	Elsberry, Mo	12. CITIZEN OF WHAT COUNTRY?			
13. FATHER'S NAME	Jerry Blackorby	14. MOTHER'S MAIDEN NAME	Jean Howdyshell						
15. WAS DECEASED EVER IN U. S. ARMED FORCES? (Yes, no, or unknown)	No	(If yes, give war or dates of service)	16. SOCIAL SECURITY NO.	518-07-1231	17. INFORMANT	Address: Hospital Records-Gt Fls, Mont			

18. CAUSE OF DEATH [Enter only one cause per line for (a), (b), and (c).]

PART I. DEATH WAS CAUSED BY: IMMEDIATE CAUSE (a) Carcinoma of right lung — INTERVAL BETWEEN ONSET AND DEATH: 6 mo

Conditions, if any, which gave rise to above cause (a), stating the underlying cause last. DUE TO (b) Inanition and metastasis — 3 mos

DUE TO (c)

PART II. OTHER SIGNIFICANT CONDITIONS CONTRIBUTING TO DEATH BUT NOT RELATED TO THE TERMINAL DISEASE CONDITION GIVEN IN PART I (c) — 19. WAS AUTOPSY PERFORMED? YES ☐ NO ☒

20a. ACCIDENT ☐	SUICIDE ☐	HOMICIDE ☐	20b. DESCRIBE HOW INJURY OCCURRED. (Enter nature of injury in Part I or Part II of Item 18.)		
20c. TIME OF INJURY	Hour: a. m. p. m.	Month, Day, Year			
20d. INJURY OCCURRED WHILE AT WORK ☐ NOT WHILE AT WORK ☐	20e. PLACE OF INJURY (e.g., in or about home, farm, factory, street, office bldg., etc.)		20f. CITY, TOWN, OR LOCATION	COUNTY	STATE

21. I attended the deceased from 6-15-56 to 9-12-56 and last saw (him) (her) alive on 9-7-56

Death occurred at 1:40 a m. on the date stated above; and to the best of my knowledge, from the causes stated.

22a. SIGNATURE (Degree or title): Chas F Little MD	22b. ADDRESS: Great Falls, Montana	22c. DATE SIGNED: 9-13-56

23a. BURIAL, CREMATION, REMOVAL (Specify): Burial	23b. DATE: 9/ /56	23c. NAME OF CEMETERY OR CREMATORY: Highland cemetery	23d. LOCATION (City, town, or county) (State): Great Falls, Montana	
24. FUNERAL DIRECTOR: ADDRESS: T F O'Connor Co Gt Fls, Mont	25. DATE RECD. BY LOCAL REG.: Sept 13, 1956	26. REGISTRAR'S SIGNATURE: Betty S Gilson, MD		

STATE OF MONTANA, County of Cascade. } ss.

Date Issued Nov 13 19 56

This is to certify that the above document is a true and correct copy of the information shown on the duplicate Death Record on file in this office.

By A Iconicle, Deputy.

D. McDonald, County Clerk and Recorder, Cascade County, Montana.

EXHIBIT J–2

THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., November 15, 1956.

INDUSTRIAL HYGIENE

Subject: Arsine protective devices and program used at the Great Falls plant.
To: Mr. F. S. Weimer.

Workmen at the Great Falls zinc plant receive continuous protection from the remote possibility of contamination of the air by arsine gas by means of 6 self-monitoring arsine trains, 3 of which are located in the zinc leaching department and 3 in the purification residue plant. Each arsine train is strategically located and is so constructed as to take a maximum of 12 continuous air samples from adjoining operational areas. Air being sampled passes through a quarter-inch pipe which leads to a collecting box where interferring substances are removed from the air sample by bubbling it through a series of bottles containing appropriate solutions. Air samples from various collection points is joined at this point and the total aggregate sample is bubbled through another bottle containing a solution of silver nitrate. This silver nitrate solution will become dark in the presence of arsine. A beam of light projected through this silver nitrate solution will be interrupted by any darkening of the solution. This interruption will actuate a warning siren.

Maintenance and inspection are rigidly scheduled to insure that all trains are in good working condition at all times. The industrial hygiene department inspects all trains every other day. All electric eyes are adjusted. Clean bottles and fresh solutions are furnished as needed. Each week this department makes independent tests of air in spots considered most likely to show arsine, using for these tests an extremely sensitive testing device recommended to us by the United States Public Health Service. These tests act as spot checks on the self-monitoring arsine trains. The results of the checks are submitted to management as the weekly arsine report; 520 such samples are taken each year. In addition to this, each shift foreman at the purification residue plant and zinc leach inspects those trains in his jurisdiction several times each shift, there being three shifts a day. These foremen then submit at the end of each week, a written report to the superintendent of the zinc leaching department, stating the condition of the arsine. If, within this period, a warning siren has sounded, the reason for this alarm must be included in the report. The initialed report is then sent to the superintendent of the zinc plant. Once each month the assistant superintendent of the zinc leaching department and the superintendent of the zinc plant make a complete inspection of all of the arsine trains. A report is made of the results of that inspection which include notations of any malfunction of any of the trains as found in the weekly reports of the foremen, and this monthly report is submitted to management. A copy of this report for the month of October is enclosed, with a copy of the foremen's weekly report for 1 week in October, and copies of the weekly arsine reports made by the industrial hygiene department covering the month of October.

Though the self-monitoring trains are important in protection against arsine, more important still are the many elaborate precautions that have been taken to prevent arsine from contaminating the working atmosphere at this plant. Any operation involving the slightest chance of arsine, accidentally or otherwise, is positively ventilated by electrically driven fans. The operation of leaching and processing tanks is so arranged that the fan ventilating that tank must be in operation before the tank agitator can be started. In any case where tank operation involves foaming we have taken precautions to prevent the foam from coming in contact with the working atmosphere or spilling into the working area. Such a tank is equipped with a float-actuated switch which shuts off the tank agitator when the foam reaches the top of the tank. A pyramidal hood encloses the top of the tank to contain the foam should excessive amounts be formed. Liquid manometers are installed in all ventilating stacks in order that the draft may be checked by the operator while performing his duties. Each foreman also checks these instruments several times during his shift. This insures that all fans are operating properly and that each tank is being positively vented.

Any work necessary to maintain this protective equipment has priority over all other work to assure that protection is maintained at all times. Any time these

component parts must be shut down for repair the corresponding operation is suspended until such components are once again in good working order and have been placed back in service. If for any reason one or more of the self-monitoring arsine trains become inoperative, that portion of the plant protected by the inoperative train or trains is shut down. Under no circumstances does this plant or any part of this plant operate without the protection of the self-monitoring arsine trains.

Workmen whose job it is to maintain and repair those tanks in which arsine could possibly be generated are also rigidly safeguarded. Before such a tank may be entered by a repair crew it first must be qualitatively checked for arsine by the zinc leaching department which has for this purpose the extremely sensitive arsine testing device also used by the industrial hygiene department for its weekly tests. Upon completion of this check and if no arsine is found, an inspection tag is prominently displayed at the tank so stating that this tank has been inspected and found safe to enter. The man who checks the tank is qualified to do so and this job is delegated by the superintendent of the zinc leaching department. Also, while crews are working inside the tank, fresh air is blown into the tank by an electrically driven blower furnished by the zinc leaching department solely for that purpose.

JOHN C. REYNOLDS,
Industrial Hygiene Department.

MEMORANDUM: ARSENIC TRAINS IN ZINC PLANT LEACHING DEPARTMENT, OCTOBER 1956

1. Zinc dust purification

This department operated continuously during the month. The arsenic trains were kept in good operating condition, and were reconditioned regularly every week.

At no time did the arsenic trains indicate the presence of arsine gas in the atmosphere in or around the building.

2. Fume leach

This department operated 31 days during the month. The arsenic trains were kept in good operating condition and were regularly reconditioned.

At no time did the arsenic trains indicate the presence of arsine gas in the atmosphere in or around the building.

3. Iron purification

This department operated 31 days during the month. The arsenic trains were kept in good operating condition.

At no time did the arsenic trains indicate the presence of arsine gas in the atmosphere in or around the building.

4. Purification residue plant

This department operated continuously during the month. The arsenic trains were kept in good operating condition.

The siren actuated at the special Cd leach on October 28 and 31 due to excess foaming.

At no time did the arsenic trains indicate the presence of arsine gas in the atmosphere in or around the building.

HOWARD WORLEY,
Zinc Leaching Department.
GUY T. LEFEVER,
Superintendent, Zinc Plant.

OFFICE OF THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., October 25, 1956.

Memorandum to Mr. C. V. Saylor, general superintendent, the Anaconda Co., Great Falls, Mont.

On October 25, 1956, I inspected the protective and ventilating equipment at the purification residue plant. The equipment was in good order and being operated properly.

GUY T. LEFEVER,
Superintendent, Zinc Plant.

83066—56——36

THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., October 8, 1956.

INDUSTRIAL HYGIENE

Weekly arsine report

The following air samples were taken for arsine at the purification residue plant and zinc leach on October 6, 1956:

Location	Time	Remarks
	a. m.	
Over top of No. 2 purification residue leach tank	9:16	During the addition of purification cake.
Over top of main launder at copper purification	9:37	During the addition of zinc dust.
Over top of No. 1 cadmium purification tank	8:47	1 minute after the addition of zinc dust.
Over top of No. 2 secondary purification tank	9:08	Immediately following the addition of zinc dust.
Over top of secondary Dorr	8:53	As No. 4 secondary purification tank was being discharged to the Dorr.
Over top of No. 1 cadmium-leach tank	9:01	During the addition of cadmium sponge.
Over top of No. 24 Dorr	9:48	No. 2 iron-purification tank was being discharged to the Dorr.
Over top of main discharge launder in zinc-dust purification basement.	9:55	As Nos. 12 and 13 tanks were being discharged.
Over top of No. 11 zinc-dust purification tank	10:06	5 minutes after the addition of zinc dust.

NOTE.—All above air samples indicated arsine concentrations were less than the threshold limit for arsine (0.05 parts per million).

JOHN C. REYNOLDS,
Industrial Hygiene Department.

THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., October 15, 1956.

INDUSTRIAL HYGIENE

Weekly arsine report

The following air samples were taken for arsine at the purification residue plant and zinc leach on October 13, 1956:

Location	Time	Remarks
	a. m.	
Over top of No 1 purification residue leach tank	9:40	During the addition of purification cake.
Over top of No. 2 cadmium purification tank	9:33	4 minutes after the addition of zinc dust.
Over top of No. 4 secondary purification tank	9:04	Following the addition of zinc dust.
Over top of secondary Dorr	9:10	As Nos. 1 and 3 secondary purification tanks were being discharged to the Dorr.
Over top of No. 1 cadmium-leach tank	9:23	During the addition of cadmium sponge.
Over top of No. 24 Dorr	9:50	No iron-purification tank was being discharged to the Dorr.
Over top of main discharge launder in zinc-dust purification basement.	9:57	As Nos. 5, 10, and 12 tanks were being discharged.
Over top of No. 8 zinc-dust purification tank	10:07	5 minutes after the addition of zinc dust.

NOTE.—All above air samples indicated arsine concentrations were less than the threshold limit for arsine (0.05 parts per million).

JOHN C. REYNOLDS,
Industrial Hygiene Department.

THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., October 22, 1956.

INDUSTRIAL HYGIENE

Weekly arsine report

The following air samples were taken for arsine at the purification residue plant and zinc leach on October 20, 1956:

Location	Time	Remarks
	A. M.	
Over top of No. 1 purification residue leach tank	9:46	During the addition of purification cake.
Over top of main discharge launder from purification residue leach tanks.	9:19	As No. 4 tank was being discharged.
Over top of main launder at copper purification	9:39	During the addition of zinc dust.
Over top of No. 1 cadmium-purification tank	9:12	3 minutes after the addition of zinc dust.
Over top of No. 1 secondary purification tank	9:59	Following the addition of zinc dust.
Over top of secondary Dorr	9:53	As No. 3 secondary purification tank was being discharged to the Dorr.
Over top of No. 2 cadmium-leach tank	9:28	During the addition of cadmium sponge.
Over top of No. 24 Dorr	10:08	As Nos. 2 and 4 iron-purification tanks were being discharged to the Dorr.
Over top of main discharge launder in zinc-dust purification basement.	10:16	As Nos. 24 and 25 tanks were being discharged.
Over top of No. 19 zinc-dust purification tank	10:26	5 minutes after the addition of zinc dust.

NOTE.—All above air samples indicated arsine concentrations were less than the threshold limit for arsine (0.05 parts per million).

JOHN C. REYNOLDS,
Industrial Hygiene Department.

THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., October 29, 1956.

INDUSTRIAL HYGIENE

Weekly arsine report

The following air samples were taken for arsine at the purification residue plant and zinc leach on October 27, 1956:

Location	Time	Remarks
	a. m.	
Over top of No. 5 purification residue leach tank	9:36	During the addition of purification cake.
Over top of main discharge launder from purification residue leach tanks.	9:15	As No. 1 tank was being discharged.
Over top of main launder at copper purification	8:53	During the addition of zinc dust.
Over top of No. 3 cadmium-purification tank	10:03	1 minute after the addition of zinc dust.
Over top of No. 3 secondary purification tank	9:27	Following the addition of zinc dust.
Over top of secondary Dorr	10:09	As No. 4 secondary purification tank was being discharged to the Dorr.
Over top of No. 1 cadmium-leach tank	9:01	Following addition of cadmium sponge.
Over top of No. 24 Dorr	10:18	As No. 3 iron-purification tank was being discharged to the Dorr.
Over top of main discharge launder in zinc-dust purification basement.	10:27	As Nos. 1, 27, and 28 tanks were being discharged.
Over top of No. 21 zinc-dust purification tank	10:36	5 minutes after the addition of zinc dust.

NOTE.—All above air samples indicated arsine concentrations were less than the threshold limit for arsine (0.05 parts per million).

JOHN C. REYNOLDS,
Industrial Hygiene Department.

OFFICE OF THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., October 28, 1956.

Memorandum to: Mr. G. T. Weaver, superintendent, zinc plant.

During the week ending October 28, 1956, I personally inspected and tested all the protective and warning devices in the leaching plant each day. The men in the leaching plant are all using the equipment in the proper manner.

R. O. EASTMAN, *Leaching Foreman.*

OFFICE OF THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., October 28, 1956.

Memorandum to: Mr. G. T. Weaver, superintendent, zinc plant.

During the week of October 22, 1956, I personally inspected and tested all the protective and warning devices at the P. R. plant each day. The men at the P. R. plant are all using the equipment in the proper manner.

R. BOGGS, *P. R. P. Foreman.*

OFFICE OF THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., October 28, 1956.

Memorandum to: Mr. G. T. Weaver, superintendent, zinc plant.

DEAR SIR: During the week of October 28, 1956, I personally inspected and tested all the protective and warning devices in the P. R. plant each day. The men at the P. R. plant are all using the equipment in the proper manner.

B. ANDERSON.
C. OLLIN.

OFFICE OF THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., October 29, 1956.

Memorandum to Mr. G. T. Wever, superintendent, zinc plant.

During the week of October 29, 1956, I personally inspected and tested all the protective and warning devices at the P. R. plant each day. The men at the P. R. plant are all using the equipment in the proper manner.

A. JORGENSON.
C. ALINE.

OFFICE OF THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., October 29, 1956.

Memorandum to Mr. G. T. Wever, superintendent, zinc plant.

During the week of October 29, 1956, I personally inspected and tested all the protective and warning devices in the leaching plant each day. The men in the leaching plant are all using the equipment in the proper manner.

J. DICKSON.
C. ALINE.

OFFICE OF THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., October 29, 1956.

Memorandum to Mr. G. T. Wever, superintendent, zinc plant.

DEAR SIR: During the week ending October 29, 1956, I personally inspected and tested all the protective and warning devices in the leaching plant each day. The men in the leaching plant are all using the equipment in the proper manner.

A. HUTTINGER.
C. ALLIN.

EXHIBIT K-2

THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., November 19, 1956.

MEMORANDUM

In July 1955, shop stewards from the electrolytic copper refinery requested permission from management for the drawing crew to start work at 5 a. m. and check out at 1 p. m., on those days when copper was drawn from divisions Nos. 15–16 and Nos. 17–18. The men stated that by doing this they would be able to complete their work before the day became too warm. Permission was granted pending replacement of the ventilating system. On September 19, 1955, with the advent of cooler weather, this practice was discontinued. During the summer of 1956, permission was again requested to start at 5 a. m., following the pattern set in 1955. The men were told that the ventilating system had been replaced and was in operation. Shop stewards stated that the ventilating system did not provide sufficient relief, so a fan was installed in the monitor windows over divisions Nos. 15–16 and Nos. 17–18, where it would circulate air on the men working there. No further requests were received to start work at 5 a. m.

L. J. INGVALSON,
Assistant General Superintendent.

JUNE 27, 1956.

Mr. C. V. SAYLOR,
General Superintendent.

DEAR SIR: A safety-first meeting was held at the electrolytic copper refinery on June 27, 1956, at 2 p. m.

The following men were present:

R. H. Miller, superintendent of copper refineries
Carl Borgreen, safety engineer
Graham Cadwell, acting general foreman, E. C. R.
Steve Koza, acting superintendent of E. C. R. (chairman)

J. Upshaw	A. Nelson	L. Lander
A. Schmidt	F. Falardeau	C. Marcoff
H. Petrini	M. McNichols	C. Beerbohm
M. Bullard	N. Pacini	R. Ward
V. Busch	E. Merkel	J. Kelleher
R. Sharette	D. Edwards	G. Poletto
A. Guse	B. Morgan	F. Muretta
S. Corr	R. Merenz	A. Figarelle
C. Shumate	W. Salyer	C. Buechler
E. Remillard	T. Bierwagon	N. Morris
K. Pardue	R. Robbins	S. Dammen

The minutes of the previous meeting were read and approved.

FINISHED BUSINESS

Signs have been put up in stairways, warning of crane overhead.
Tankmen have been cautioned about piling scrap starting sheets improperly on racks.

UNFINISHED BUSINESS

Install fans in all cranes.

NEW BUSINESS

Mr. McNichols cautioned against men walking under cranes when machinists or electricians are working on them.
Mr. Koza warned the men about the hazards of leaving tools in the aisle.
Mr. Cadwell suggested that we teach all new men safety practice.
Mr. Miller complimented the men on 10,000 accident-free shifts. Also read an interesting article on Not To Gamble Life or Limb To Gain a Few Seconds. Urged everyone to work carefully.

Mr. Borgreen discussed the working conditions at the ECR and urged that the men cooperate in keeping the working area clear. He also suggested that the men cooperate in using safety equipment available to them. Mr. Borgreen introduced a new eyewash in a plastic squeeze bottle.

Mr. Miller complimented the men on keeping the lunchroom clean.

There being no further business, the meeting was adjourned.

Very truly yours,

STEPHEN KOZA, *Chairman.*

[Interdepartmental correspondence]

ANACONDA COPPER MINING CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., July 28, 1956.

Mr. C. V. SAYLOR,
General Superintendent.

DEAR SIR: A safety-first meeting was held at the electrolytic copper refinery on July 27, 1956, at 2 p. m.

The following men were present:

R. H. Miller, superintendent of copper refineries.
S. R. Westgard, assistant superintendent of copper refineries.
Carl Borgreen, safety engineer.
G. Cadwell, acting general foreman, ECR.
S. Koza, acting superintendent of ECR (chairman).

H. Baldry	A. Schmidt	K. Pardue
A. Peterson	C. Buechler	M. Bullard
A. Martin	L. Woodahl	D. Barrett
S. Dammen	G. Hartman	V. Busch
H. Jones	N. Pacini	W. Thornton
J. Edwards	W. Gardner	G. Olson
D. Hebert	W. Staats	
F. Tobel	A. Brantner	

The minutes of the previous meeting were read and approved.

FINISHED BUSINESS

Men have been warned about walking under cranes when they are being repaired.

UNFINISHED BUSINESS

Install fans in all cranes.

NEW BUSINESS

1. Mr. Busch asked that the first-aid cabinets have more equipment in them.
2. Mr. Gardner complained about the fumes given off by the paint used on the new refining tanks.
3. Mr. Borgreen introduced a new plastic-type glasses.

Mr. Borgreen showed a safety graph on the hazards of accidents caused by falls.

Mr. Miller complimented the men on the safety record so far established.

There being no further business, the meeting adjourned.

Very truly yours,

STEPHEN KOZA, *Chairman.*

[Interdepartmental correspondence]

ANACONDA COPPER MINING CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., August 30, 1956.

Mr. C. V. SAYLOR,
General Superintendent.

DEAR SIR: A safety-first meeting was held at the electrolytic copper refinery on August 29, 1956, at 2 p. m.

The following men were present:

R. H. Miller, superintendent of copper refineries
Carl Borgreen, safety engineer
Graham Cadwell, acting general foreman ECR
Steve Koza, acting superintendent of ECR (chairman)

R. Shanagan	D. Barrett	N. White
F. Gorney	G. Kraft	A. Buck
K. Pardue	A. Figarelle	F. Tobel
E. Kocher	H. Petrini	H. Mayer
C. Bacon	C. Buechler	V. Busch
B. Walzak	W. Schoelkoph	N. Pacini
D. Lander	R. Robbins	H. Jones
R. Ward	S. Dammen	E. Brunner
J. Toy	J. Lessing	H. Nichols
H. LaRocque	G. Poletto	J. Upshaw
D. Lander	F. Wraught	W. Salyor
L. Woodahl	R. Sharette	B. Morgan
J. Edwards	N. Sharette	
J. Kelleher	A. Guse	

The minutes of the previous meeting were read and approved.

FINISHED BUSINESS

1. The first-aid cabinets have been adequately stocked with equipment.
2. Inspectors are wearing the new type plastic-type glasses.

UNFINISHED BUSINESS

1. Install fans in all cranes.
2. The complaint about fumes given off by the paint used on the new refining tanks.

NEW BUSINESS

1. Mr. White complained about the stairways above the mixing tanks being rickety.
2. Mr. Ward complained about bad ladders in the basement.
3. Mr. Poletto stated that the floor near the top secondary in the silver room sways and should be braced.
4. Mr. Lessing complained that the sump pumps are allowed to blow steam, causing pollution of the air.
5. Mr. Tobel warned everyone to stay away from anodes on the crane, and also that not all the buckets in the crane had sand in them.
6. Mr. Gorney asked if we couldn't eliminate the tripping hazard caused by the new planks used to reenforce the floor for truck haulage of concrete tanks through the tank house.

Mr. Miller complimented the men on the good accident record, and read an interesting article on safety off the job.

Mr. Borgreen cautioned the men to report and receive treatment for all injuries received on the plant. He also introduced a silicone skin cream to prevent acid burns.

There being no further business, the meeting adjourned.

Very truly yours,

STEPHEN KOZA, *Chairman.*

EXHIBIT L–2

Absenteeism at Great Falls Reduction Works—All causes

	Days worked	Absent	Total	Percent absenteeism
1956—June	27,813	875	28,688	3.05
July	27,526	957	28,483	3.36
August	34,807	1,041	35,848	2.90
September	28,239	784	29,023	2.70

Absenteeism at Electrolytic Copper Refinery—All men, all causes

	Days worked	Absent	Total	Percent absenteeism
1956—June	3,902	104	4,006	2.59
July	4,108	87	4,195	2.09
August	3,765	119	3,884	3.06
September 1 to 15	1,979	53	2,032	2.61

This compares absenteeism in the whole plant with absenteeism in the electrolytic copper refinery where extreme heat was supposedly causing men to miss shifts due to lack of ventilation.

CLARENCE V. SAYLOR,
General Superintendent.

NOVEMBER 15, 1956.

EXHIBIT M–2

THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., November 19, 1956.

Subject: Ventilation of the electrolytic copper refinery.
To: Mr. F. S. Weimer, manager.

In July of 1956, the replacement of the original ventilating system at the ECR with stainless steel pipe was completed. Since that time the amount of air being delivered through this system has been increased considerably. We now have in operation 2 Sturtevant No. 100 steel plate fans with a total installed capacity of 37,000 cubic feet per minute. Air is delivered from the fans to overhead ductwork which runs parallel to the long axis of the tankhouse. One fan serves the west side of the building, 13 vertical drops being taken off the west duct. One of these drops supplies air to the working floor, the remaining 12 supply fresh air to the basement area. The other fan serves the east side of the building and has 14 vertical drops from the east duct. Three of these drops furnish fresh air to the working floor and the remaining 11 furnish fresh air to the basement area. We thus have a total of 27 fresh-air outlets in the tankhouse, each delivering an average of 1,300 cubic feet per minute. Crews working in the basement areas have been able to attach flexible fabric tubing to the basement outlets to supply fresh air to individual working areas. These men also have at their disposal three type I–1600 Jay Axivane fans to supplement the basement air outlets. These too may be used with the flexible fabric tubing.

In addition to the primary ventilation circuits, 2 man-cooler-type fans have been placed in the roof monitors above divisions Nos. 16 and 17. A third fan similar to these two fans has been on order for some time and is scheduled for delivery in the very near future. The industrial hygiene department is aware that the electrolytic tanks must operate within a comparatively narrow temperature range. If these tanks are cooled below this optimum range the efficiency of the electrolytic operation will be adversely affected.

No study of temperatures has been made in the tankhouse since the replacement of the ventilation equipment was made. However, we do have comprehensive material on this subject compiled during 1952–53 at which time the ventilating system was inoperative. Copies of this study are enclosed. These

reports cover the major portion of our seasons which should be valid for average conditions. This conclusion is based on the fact that we have only 1 month which may actually be considered hot, the month of August. This year, for example, our really hot weather lasted less than 3 weeks, and you will remember that the last week in August was very cold. The sample temperatures taken, then, represent a statistically sound base and show that the average temperature in the tankhouse divisions to be 74° F. The average temperature in the stripper sections is 69° F., and in the basement, 72° F.

Natural air circulation of course is responsible for most of the air movement in the tankhouse. This department has been making a preliminary study of an economical and very effective means of utilizing the tremendous potential draft effect found to exist in the tankhouse. It is felt that the admission of cool, outside air to selected locations in the basement could displace controlled amounts of air in some, if not all, of the areas now considered uncomfortably warm. When this idea becomes more fully developed, a specific outline will be drawn up and submitted for your consideration.

JOHN C. REYNOLDS,
Industrial Hygiene Department.

INDUSTRIAL HYGIENE

NOVEMBER 26, 1952.

ECR stripper section ventilation

At the request of Mr. T. K. Graham, an investigation was made at the ECR stripper section to determine the cause of personnel requests for ventilation. Discussions with personnel indicated the basic complaint was excessive heat and humidity. This complaint has been made by personnel at various times over a period of years and was recently revived by the removal of a Butte mine blower type of fan which had been utilized to furnish fresh air to No. 3 stripper section (since March 1952). This fan was originally installed to furnish fresh air to brickmasons who were repairing the basement floor under the stripper section, but, when repair work in the basement was completed, the fan discharge duct was relocated so that fresh air was discharged into the stripper section area at No. 3 section.

The phase of industrial hygiene which pertains solely to air conditioning has not, in the past, received attention equivalent to that given atmospheric contamination; consequently, there is only a minimum of available information concerning heat and humidity at the ECR tankroom. Recently obtained heat and humidity data is shown in the following table:

No.	Location	Dry bulb temperature (degrees Fahrenheit)	Wet bulb temperature (degrees Fahrenheit)	Relative humidity	Effective temperature (degrees Fahrenheit)
1	Between divisions Nos. 23 and 24	69	64	77	67
2	Between divisions Nos. 21 and 22	74	66.5	68	71
3	Between divisions Nos. 18 and 19	77	67.5	62	73
4	Between divisions Nos. 10, 11, 14, and 15 (not in operation)	74	66	66	71
5	Between divisions Nos. 6 and 7	77.5	68.5	60	73
6	Between divisions Nos. 3 and 4	78	70	67	74
7	Between divisions Nos. 1 and 2	79	68	57	74
8	Between stripper sections Nos. 1 and 2	75	65	58	71
9	Center of stripper section No. 3	75	65	58	71
10	Center of sheet room (radiators off)	64	49	31	60
11	In basement below stripper section No. 1	74	62.5	53	69
12	In basement below stripper section No. 2	70.5	60.5	56	67
13	In basement below stripper section No. 3	67	59	62	64
14	In basement below divisions Nos. 1 and 8	75	66	62	71
15	In basement below divisions Nos. 4 and 5	74	64	62	70
16	In basement below divisions Nos. 17 and 24	70.5	60	53	66
17	In basement below divisions Nos. 20 and 21	66.5	56.5	52	63

The following tabulation shows a correlation of information listed in the preceding data:

Location	Average relative humidity	Average effective temperature (degrees Fahrenheit)
	Percent	
Entire tankroom (working level)	64	72
Divisions Nos. 1 to 24 (working level)	65	72
Stripper sections (working level)	58	71
Entire tankroom basement	57	67
Stripper sections basement	57	67
Divisions basement	57	67

When information shown in the preceding data was obtained, only a few doors and windows were open, and the outside temperature was 20° F.

The effective temperature shown in the data is a calculated arbitrary index which combines into a single value the effect of temperature, humidity, and air movement on the sensation of warmth or cold felt by the human body. An optimum effective temperature which can be used as a basis for comparison with calculated effective temperatures is 66° F. This optimum figure can be defined as that effective temperature during the winter season at which greater than 50 percent of the people would be comfortable if they were normally clothed and at rest.

The optimum effective temperature (66° F.) is not an ideal basis for comparison because the value is based upon resting conditions, not those of physical exertion; however, where physical exertion occurs, the assumption can be made that the effective temperature (optimum) would be equivalent to or less than 66° F.

The data of this report shows conditions at the stripper sections to be equivalent to or better than those in the remainder of the tankroom; the data, however, represents only one condition of the many which may exist; therefore, conclusions based on the data cannot be made. The following are opinions of the industrial hygiene department:

1. The present installation is not considered ideal for various reasons; but, personnel appear to have been satisfied with this installation.

2. If subsequent heat and humidity measurements indicate air conditioning is necessary, consideration should be given to the installation of wall fans which deliver large volumes of air at low cost.

LEONARD C. POWELL,
Industrial Hygiene Engineer.

INDUSTRIAL HYGIENE

E. C. R. Tankroom

This report concerns relative humidity measurements at the E. C. R. tankroom, and this data was obtained to increase available information concerning relative humidity so that an average figure could be determined at some date in the future.

Location	Dry bulb temperature (degrees Fahrenheit)	Wet bulb temperature (degrees Fahrenheit)	Relative humidity (percent)	Effective temperature (degrees Fahrenheit)
Out of doors at E. C. R.	47	37	37	46.5
No. 1 stripper section	62	49	39	59
No. 2 stripper section	67	50	29	62.5
No. 3 stripper section	71	55	36	65.5
Do.	72	54	30	66
Sheet room	62	45	23	58.5
Between divisions Nos. 2 and 3	69	56	45	64.5
Between divisions Nos. 6 and 7	75	60	42	69
Between divisions Nos. 6, 7, 10, and 11	70	56	42	65.5
Between divisions Nos. 10 and 11	76	61	43	70
Between divisions Nos. 14 and 15	79	63	42	72
Between divisions Nos. 14, 15, 18, and 19	78	62	41	71
Between divisions Nos. 18 and 19	79	64	45	72½
Between divisions Nos. 22 and 23	76.5	62.5	47	71
In basement below division No. 18	73	58	41	67.5
In basement below division No. 10	70	60	40	69.5
In basement below division No. 2	75	58	36	68.5

A correlation of information shown in the preceding table and results (in parentheses) of a survey made November 26, 1952, are shown below:

Location	Average relative humidity (percent)	Average effective temperature (degrees Fahrenheit)
Divisions Nos. 1 to 24 (working level)	44 (65)	70 (72)
Stripper sections	34 (58)	63 (71)
Basement	30 (57)	[1] 69 (67)

[1] Average contains 1 low figure.

When recently obtained information shown in the above averages was determined, all doors to the building were open, a few windows in the monitors were open, and the temperature outside of the building was 47° F. When data shown in parentheses was obtained, only a few doors and windows were open, and the temperature outside of the building was 20° F.

The standard used for determining the significance of the data shown in this report is effective temperature. This temperature is a calculated arbitrary index which combines into a single value the effect of humidity, temperature, and air movement on the sensation of warmth or cold felt by the human body. The range of effective temperatures during the winter season, at which greater than 50 percent of the people would be comfortable if they were normally clothed and at rest, is 63° to 71° F. (optimum is 66° F.).

The use of effective temperature as a standard for comparing results does not signify that effective temperature is considered an ideal base for comparison, because it is not. This method does, however, permit a comprehension of conditions otherwise unobtainable, and this is the reason for its use.

There are no conclusions concerning the data because this information was obtained solely for purpose of increasing available data concerning relative humidity at the tankroom.

LEONARD C. POWELL,
Industrial Hygiene Department.

INDUSTRIAL HYGIENE

MARCH 18, 1953.

E. C. R. tankroom

The following represents a study made at the E. C. R. tankroom on March 17, 1953, to procure additional information concerning relative humidity in the tankroom.

Location	Temperature (degrees Fahrenheit)		Relative humidity	Effective temperature (degrees Fahrenheit)
	Dry bulb	Wet bulb		
Divisions Nos. 17 and 18	70	56	42	65
Divisions Nos. 19 and 20	74	59	42	68
Divisions Nos. 13 and 14	73	58	41	67.5
Divisions Nos. 15 and 16	69	54.5	39	64.5
Divisions Nos. 7 and 8	67.5	53	38	63
Divisions Nos. 3 and 4	63	50	40	60
Stripper section No. 3	69	52.5	32	64
Do	69.5	52.5	31	64
Stripper section No. 2	64	49.5	35	60
Do	66	51.5	37	62
Sheet room	69.5	49.5	21	63.5
Basement stripper section No. 3	71	53.5	31	65
Basement division No. 13	74	58	38	68
Basement division No. 21	70	54.5	37	65

Average relative humidities and effective temperatures for various locations are shown in the following table:

Location	Average relative humidity	Average effective temperature
Divisions Nos. 1 to 24 (working level)	40 (44, 65)	65 (70, 72).
Stripper sections (working level)	34 (34, 58)	62 (63, 71).
Basement	35 (39, 57)	66 (69, 67).

NOTE.—Values in parentheses were obtained during previous surveys.

The data shown in this report represents the third survey pertaining to relative humidity at the E. C. R. tankroom. These surveys were instituted in November 1952 for the purpose of obtaining a comparison between relative humidities at the stripper sections and relative humidities in the remainder of the tankroom. To date, all surveys indicate relative humidities at the stripper section are less than those in the remainder of the tankroom.

LEONARD C. POWELL,
Industrial Hygiene Engineer.

NOVEMBER 19, 1956.

EXHIBIT N–2

MEMORANDUM

Mr. SAYLOR: Regarding smoke at zinc casting area: The principal source of smoke causing complaint at the zinc casting plant are:

1. Hood over dross drums.
2. Furnace skimming doors.
3. Hoods over furnace charge doors.
4. Stacks on the melting furnaces.
5. Containers used to move dross from skimming doors to dross drums.

The hood over the dross drums is open through the roof to the atmosphere. A Joy Microdyne has been ordered for this location and we expect that it will eliminate smoke from this open hood.

Hoods over the skimming doors on each furnace are connected into a fan which exhausts through the roof to the atmosphere. These fans, 1 on each furnace,

do a good job if not more than 2 hoods are being used at 1 time and if dampers are properly adjusted. Because these conditions are not always met, another fan is to be installed on each furnace and this should make a marked improvement.

The hoods over the furnace charge doors exhaust through the roof. They do a fair job when other parts of the system are working properly. The bottom openings of these hoods are necessarily large to permit getting the charge into the furnaces. The outlets from the hoods extend only a short distance through the roof and it has been suggested that these outlets should be raised to exhaust the smoke at a higher elevation. I do not think this would result in any great improvement. When the charge doors are open there is a great deal of smoke. Microdynes or some other type of collectors should be considered for exhausting from these hoods.

The stacks on the furnaces are connected to a flue which discharges through a fan to the bag house. This system does a good job except when it is necessary to shut the fan down. The stacks are then opened to the atmosphere so there is less draft on the furnaces resulting in more smoke from all openings, skimming doors and charge doors. I think this is the condition causing most of the complaint. The bag-house fan is shut down once a day for a period of 15 minutes to clean the runners. This occurs just before the day-shift men start work and is not too serious, but about 3 times a month the fan is shut down for the full day shift to permit drawing dust from the cooler-section bins which are on the suction side of the fan. This is not good. Installation of air-lock discharge gates on the cooler bins would probably permit us to keep the fan running except for the daily cleaning.

Dross skimmed from the furnaces is transported in steel boxes on fork trucks to the dross drums. A lot of smoke comes off these boxes. Covers were tried but did not make much improvement. The use of a mixture of charcoal with ammonium chloride for drossing has made some improvement.

As noted above, some measures are underway to improve conditions, such as more fans for skimming door hoods and a microdyne for the dross-drum hood. The only other recommendation I would make at this time is to see if we can avoid shutting down the bag house 3 days a month.

JAMES W. PORTIUS,
Mechanical Superintendent.

ANACONDA, CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., November 19, 1956.

Subject: Report on the zinc casting department.
To: Mr. F. S. Weimer, manager.

Zinc slabs and zinc dust are produced at the zinc casting department. Ammonium chloride (sal ammoniac) is used to cover the motel zinc in the casting furnace to prevent oxidation. Molten zinc is dipped from a well located in one end of the furnace by a hand-operated ladle suspended from an overhead rail. The molten zinc is poured from the ladle by the operator, into the molds arranged nearby. Zinc dust is made by pouring molten zinc through a small orifice into a blast of compressed air and receiving the fine particles in large bins.

During the operation of these furnaces, of which we have four, large amounts of material collect on top of the molten bath of zinc which is known as zinc dross. The dross must be removed at regular intervals and this operation is known as skimming. The dross is skimmed through doors located in the sides of the furnace into rectangular boxes known as dross buggies. Each buggy is equipped with a hinged cover which serves to cover the smoking dross while the buggy is being transferred from the furnace to the dross drums by a lift truck. At the dross drums metallic zinc is separated from the dross. From the dross drums, the dross passes to the dross coolers where the dross is cooled. The dross is then transferred by an enclosed chain conveyor system to a hopper car just outside the casting building. The hopper car which receives the dross is well hooded and is also positively vented by a fan into the baghouse by means of suitable ductwork.

Ammonium chloride used as flux to cover the molten zinc in the melting (or casting) furnaces gives rise to a very large amount of the smoke and dust found in the casting department. No limits have been established by the American Conference of Governmental Industrial Hygienists for the amount of ammonium chloride allowable in the working atmosphere and is not a toxic

compound. We must assume, therefore, that this compound has only nuisance values. The most serious source of contamination is to be found in the zinc dross which is skimmed from the furnaces. Two of the furnaces have 3 doors on each side, or a total of 6 doors provided for this operation. The other 2 furnaces have 4 doors on each side, or a total of 8 doors. Each furnace is equipped with a 10,000-cubic-foot-per-minute fan. Suitable ductwork connects this fan to an individual hood placed over each door of a furnace. Dampers are provided on each hood in order that only that door which is being used in the skimming operation is being vented by the fan. This of course assures that smoke escaping from the open door is adequately collected, carried to a point above the roof, and discharged into the atmosphere. It is most unfortunate that the skimming crew will not use the hoods and dampers correctly. As a result a great deal of smoky products inside the furnaces escape into the casting building. Four new fans have been ordered to double the present furnace hood capacity. One has been received and is now being installed. This will mean that when the dampers have been left open, 1 fan will now service only 3 or 4 hoods, instead of 6 or 8 hoods. It is believed this will eliminate nearly all, if not all, the smoke and dust from this source of contamination.

Dross skimmed from a furnace into a dross buggy will continue to emit smoke and dust because it is very hot. It was hoped that by providing a hinged cover for the dross buggy that most of the smoke and dust would be contained while the buggy was being transferred by lift truck from the furnace to the dross drums. Truck drivers do not always close the buggy cover in transport, giving rise to more smoke and dust. In addition, unnecessarily rough handling has so bent and distorted the shape of the covers as to largely nullify their usefulness. However, every effort is made to keep the covers in a good state of repair.

Dross from the buggies is dumped into large rotating drums where it is reheated to separate metallic zinc from the dross. This is a very serious source of contamination. The drums are vented by means of a stack which projects above the roof of the casting building. This end of the building contains several large openings as loading and access doors. The amount of dust and smoke which reenters the building depends largely upon atmospheric conditions, especially wind direction. Our prevailing wind is from the southwest which will effectively carry the stack effluents away from the plant most of the time. Under certain conditions a great deal of smoke and dust are blown back into the building. This problem is most certainly not of simple solution. It must be remembered that freshly generated zinc oxide fume particles are about the same size as those particles which compose cigarette smoke. These particles will range in sizes of from 0.2 micron to 1 micron (a micron being one twenty five thousands of an inch). No suitable equipment has been available to satisfactorily deal with particulate matter of this size until September of 1956. At that time a dust collector which was the joint development of John W. Warren, chief ventilation and industrial hygiene engineer, the Anaconda Co., and the Joy Manufacturing Co., went into production which would suit our needs. One such collector was immediately placed on order and is scheduled for delivery in December 1956. This unit will be placed in operation at the dross drums to eliminate this source of contamination. When this machine has been fully evaluated other applications may be found feasible for additional use in the zinc casting operation.

The threshold limit for zinc oxide as set forth by the American Conference of Governmental Industrial Hygienists, Eighteenth Annual Meeting, Philadelphia, April 21–24, 1956, is 15 milligrams per cubic meter of air. Workmen at zinc casting are exposed to concentration of much less than that. In addition respirators are furnished and are well accepted by the workmen. In those jobs involving a very high exposure, as in unloading the zinc dust bins, the use of respirators has been most successful. Enclosed are copies of a report on a survey made in 1955 which completely covered all operations at the zinc casting department.

JOHN C. REYNOLDS,
Industrial Hygiene Department.

THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., June 17, 1955.

INDUSTRIAL HYGIENE

The following air samples were taken at zinc casting to gather information for the annual report of this department:

No.	Location	Time	Date	Concentration, milligrams ZnO/m³	Remarks
		a. m.			
1	East side of No. 4 furnace.	8:24	May 24, 1955	0.8	Breathing zone samlpe taken as workman skimmed dross from furnace.
2	do	8:53	do	1.6	Do.
3	Below zinc-dust furnace platform.	10:21	do	[1] 2.5	General air sample taken at spare-time bench below zinc-dust furnace platform.
4	do	8:25	June 3, 1955	[1] 3.5	Do.
5	do	8:58	do	[1] 1.5	Do.
6	Top of zinc-dust furnace platform.	9:37	do	[1] 1.2	General air sample taken on southeast side of platform by hoist.
7	do	10:09	do	[1] .8	General air sample taken on west side of platform by spare-time bench. Outside door, just north of this location, was open.
8	do	10:50	do	[1] 1.5	General air sample taken adjacent to zinc-dust melting pot on northeast side of platform. Outside door, north of this location, was closed.
9	Dross coolers	8:08	June 7, 1955	3.3	Breathing level sample taken in front of cooler No. 3. Doors and windows open.
10	do	8:40	do	2.7	Same as above, except sample taken in front of cooler No. 2.
11	do	9:13	do	4.8	Same as above, except sample taken in front of cooler No. 1.
12	do	9:45	do	3.0	Breathing level sample taken in front of and between coolers Nos. 1 and 2.
13	do	10:17	do	1.1	Breathing level sample taken between Coolers Nos. 2 and 3. Coolers shut down during sample period.
14	do	10:45	do	11.3	Same as above, except coolers were operating.
15	do	10:15	June 16, 1955	4.8	General air sample taken by the handrail south of the dross coolers.
16	do	10:58	do	2.7	Do.

[1] Zinc.

NOTE.—The threshold limit for ZnO is 15 mgm per cubic meter.

REMARKS

1. The mechanical sweeper is still the object of many complaints by workmen at zinc casting. It did not happen to pass the air sampler during any of the tests in this report. However, in the past, this has happened, and has caused abnormally high readings to result. It is doubtful if this device plays any but a minor role in the total contamination at zinc casting, but this department feels that if any condition can be improved, steps should be taken to do so. If it is not feasible to replace the machine, perhaps less sweeping would be the answer.

2. As a general rule, I have observed the skimmers to be making intelligent use of the dampers over the furnace doors during the skimming operation. They are to be commended for this practice.

This department has no further remarks or suggestions to make at this time.

JOHN C. REYNOLDS,
Industrial Hygiene Department.

THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., June 30, 1955.

INDUSTRIAL HYGIENE

The following air samples were taken at zinc casting to determine the amount of zinc oxide in the air:

No.	Location	Time	Date	Concentration, milligrams ZnO/m³	Remarks
		a. m.			
1	East side of No. 4 furnace.	8:01	June 21, 1955	4.5	Breathing zone sample taken as three buggies of dross were removed from No. 4 furnace.
2	Do	8:42	do	2.2	Do.
3	Between Nos. 1 and 4 furnaces.	9:29	do	1.4	General air sample taken Nos. 1 and 4 furnaces as they were being skimmed. Casting being done on No. 2 furnace.
4	Do	10:13	do	1.1	Same as above except the furnaces were not being skimmed.
5	Between furnaces Nos. 1 and 2.	10:19	June 22, 1955	.93	General air sample taken between the furnaces. No work done during sampling period.
6	Do	11:02	do	2.1	Same as above except the furnaces were skimmed and casting was being done.
7	Dust furnaces	8:15	June 23, 1955	[1] 35.0	Breathing zone sample taken as 4 cars were filled with dust.
8	Do	8:54	do	[1] 49.4	Same as above except 3 cars filled.
9	Do	10:10	do	[1] 21.0	Breathing zone sample taken as 1 car was filled with dust.
10	Dross drums	10:55	do	11.3	General air sample taken on top of dross drum platform, west side of partition.
11	Do	9:22	June 24, 1955	15.2	Do.
12	Do	9:55	do	14.9	Do.
13	Mixing pot of No. 2 furnace.	10:34	do	1.8	General air sample taken adjacent to mixing pot of No. 2 furnace as casting was done.
14	Do	11:12	do	1.6	Do.

[1] Zinc.

NOTE.—Threshold limit for ZnO—15.0 mg/m³.

REMARKS

1. Sample Nos. 7, 8, and 9 represent conditions at the zinc-dust furnaces while zinc dust is being loaded into cars. The reason for these high readings is unknown, but at different times in the past similar conditions have been noted. Another group of samples will be taken in the fall of this year before these concentrations are included in the annual report.

2. The air samples at the dross drums were taken on the west side of the partition separating the drums from the dross coolers. In the past, samples were taken on both sides. I have changed this procedure because the dross-drum operator is exposed almost exclusively on the west side of the partition. The dross-drum operator's helper receives his exposure on both side of the partition. According to the results of air samples taken in the past and in the present, there is no significant difference between concentrations of zinc oxide on top of the dross-drum platform on the east side of the partition and concentrations of zinc oxide at the handrail south of the coolers or in front of the coolers. As a result, it will be noted that there is an increase in the concentration of zinc oxide at the dross drums over the previous years. This will give us a more accurate basis on which to calculate the dross-drum operator's exposure to zinc oxide.

3. No. 3 furnace was shut down for repairs during the time these samples and the samples in the report dated June 17, 1955, were taken.

SUGGESTIONS

The ventilation system covering the discharge end of the dross drums and the dross coolers works well as a general rule. It is recommended that all pipes in

this system that are horizontal, or nearly so, be checked at regular intervals. It seems that these have a tendency to become plugged with zinc oxide. One pipe is equipped with an airline, but I was unable to determine if this blast of air was sufficient to clean the pipe. Disassembly would be the only certain way of being sure that this duct work is not being obstructed.

Following is a table listing the total previous averages and the total present averages of concentrations of zinc oxide at zinc casting. All figures are in milligrams of zinc oxide per cubic meter of air. The threshold limit for zinc oxide is 15.0 mg/m³.

	Concentration mg ZnO/m³	
	Previous average	Present average
Zinc dust platform	2.5	2.2
Zinc dust furnace, cleaning	12.7	10.4
Dross drum platform	6.3	10.1
Dross coolers	10.5	7.6
Drossing	2.6	2.5
General air	2.1	2.0

JOHN C. REYNOLDS,
Industrial Hygiene Department.

THE ANACONDA CO.,
GREAT FALLS REDUCTION DEPARTMENT,
Great Falls, Mont., September 3, 1955.

INDUSTRIAL HYGIENE

The following samples were taken at zinc casting to determine the amount of zinc dust present in the air while the zinc-dust bins were being cleaned:

No.	Location	Time and date	Conc mg zn/m³	Remarks
1	Dust furnaces	9:05 a. m., Aug. 20, 1955.	11.4	Breathing zone sample taken as ½ car was loaded with dust. No appreciable air movement around the dust bins.
2	do	9:15 a. m., Aug. 20, 1955.	5.2	Breathing zone sample taken as 1 car was loaded with dust.
3	do	8:10 a. m., Aug. 31, 1955.	5.4	Do.
4	do	8:42 a. m., Aug. 31, 1955.	5.2	Breathing zone sample as 3 cars were loaded with dust.
5	do	8:53 a. m., Aug. 31, 1955.	6.5	Do.

NOTE.—Threshold limit for ZnO—15.0 mg/m³.

	Conc mg Zn/m³
Previous average of 3 samples	35.1
Present average of 5 samples	6.7

REMARKS

1. Due to a very high contamination found at this location on a survey made on June 30, 1955, these samples were taken to collect additional information concerning environmental conditions at the zinc dust furnaces.

2. The reasons for the high contamination found in the previous survey are not fully known. However, from time to time, comparable figures have been gathered. It is the opinion of this department that individual techniques of the workmen while unloading the bins has much to do with the amount of dust ingested. A large, strong man, for example, simply works farther back on the handle of his scraper and therefore has his breathing zone farther away from the bin opening as zinc dust is pulled out into the car. This is important because zinc dust is heavy and settles very rapidly. Another factor which may affect the concentration of zinc dust, is how much dust is in the bins. When

the bins are full a car may be loaded in 2 minutes. This will give a high concentration of zinc dust, but for a short period. On the other hand, if the bins are nearly empty, there will generally be a low concentration for a longer time, about 10 minutes. In general, it may be stated that although individual concentrations of zinc dust may vary widely, the overall exposure factor is quite stable. For this year it is 3.8 mg/m³; last year it was 3.1 mg/m³.

JOHN C. REYNOLDS,
Industrial Hygiene Department.

EXHIBIT O–2

SAFETY FIRST MEETING

The regular meeting of the Zinc Casting Safety First Committee was held in the zinc plant office, June 2, 1956, at 10:30 a. m.

The following members were present:

A. French, assistant safety engineer
L. Powell, acting superintendent, zinc casting
H. Lundberg, chairman
V. Smerker, shop steward
R. McArdle, shop steward
E. Dedman
H. Holyoak
C. Merriman
S. Riley
V. Blomstrom
V. Daniels

The minutes of the previous meeting were read and approved.

FINISHED BUSINESS

Scrap holes on furnaces are being kept as clean as present conditions permit.

UNFINISHED BUSINESS

The floor south of No. 2 furnace mold rack will be repaired when operations permit.

A platform will be installed along the south side of the upper dross drag chain, and cleanout holes will be cut in the chain cover.

Changes are being made to reduce smoke in the cooler room.

NEW BUSINESS

Smerker: Ladlers should watch out for new stackers when cleaning out their ladles. Dross truckdrivers should be more careful around new men.

[Handwritten note: Men have been asked to be more careful.]

Holyoak: Dross truckdrivers should not raise the dross skips until they are in front of the dross drums.

[Handwritten note: This practice has been stopped.]

McArdle: Skimming doors on No. 3 furnace need repairing. [Handwritten note: Done.] Dross truckdrivers should leave their trucks backed away from skimmers while waiting for a skip.

[Handwritten note: Drivers have been instructed to do this.]

Mr. French asked the men to keep up the good work and improve the accident record. We did not have an accident in the month of April at the plant.

H. E. LUNDBERG, *Chairman.*

SAFETY FIRST MEETING

The regular meeting of the Zinc Casting Safety First Committee was held in the zinc plant office, June 14, 1956, at 10:30 a. m.

The following members were present:

A. French, assistant safety engineer
L. Powell, acting superintendent zinc casting

T. Breidenbach, chairman
V. Smerker, shop steward
E. Dedman
M. Harrington
H. Feller
S. Tobel
L. Sloan
L. Knaup
G. Tucker
O. Wesche

The minutes of the previous meeting were read and approved.

FINISHED BUSINESS

Ladlers have been told to watch out for the new stackers.
The dross truck drivers have been instructed to keep trucks away from skimmers and to watch out for new men.
Skimming doors on No. 3 furnace are repaired.

UNFINISHED BUSINESS

The floor south of No. 2 furnace mould rack will be replaced when operations permit.
A platform will be installed along the south side of the upper dross drag chain, and cleanout holes will be cut in the chain cover.
Changes are being made to reduce smoke in the cooler room.

NEW BUSINESS

Smerker: Some of the steel floor sheets on dock back of casting are curling up on the edges.
[Handwritten note: Have been repaired.]
Tucker: Cathode bundles stick and hang up in both charge slides on No. 4 furnace.
[Handwritten note: Will put in sloping sides on ramp.]
Mr. French gave a brief talk on the right way to lift heavy objects. He asked the men to be sure to wear either safety glasses or goggles in restricted areas. He extended an invitation to all men to attend the first aid contest, Saturday, June 19, at the club house lawn.

T. F. BREIDENBACH, *Chairman.*

SAFETY FIRST MEETING

The regular meeting of the zinc casting safety first committee was held in the zinc plant office June 27, 1956 at 10:30 a. m.
The following members were present:

C. Borgreen, safety engineer
L. Powell, acting superintendent, zinc casting
C. Murray, chairman
J. Milliron, shop steward
H. Gurnsey, shop steward
S. Petrini
R. Kolgi
R. Beatty
G. Stack
G. Grena
F. Latiszynski
L. Delzer
C. Woods
D. Eller
R. Hill

The minutes of the previous meeting were read and approved.

FINISHED BUSINESS

The steel floor plates on No. 1 deck have been repaired.

UNFINISHED BUSINESS

The floor south of No. 2 furnace rack will be repaired when operations permit.
A platform will be installed along the south side of the upper dross drag chain and cleanout holes will be cut in the chain cover.
Cathode bundles stick and hang up in both charge slides on No. 4 furnace.

NEW BUSINESS

Gurnsey: Mold rack aprons should be checked.
[Handwritten note: Will do this.]
Grena: Shop mules steer hard.
[Handwritten note: Repaired.]
Latiszynski: Stackers get all wet on north side No. 1 furnace.
[Handwritten note: Aprons are O. K.]
Mr. Borgreen showed the men a new style safety shoe and eyewash bottles.

C. MURRAY, *Chairman.*

SAFETY-FIRST MEETING

The regular meeting of the zinc casting safety-first committee was held in the zinc plant office, July 11, 1956, at 10: 30 a. m.
The following members were present:

C. Borgreen, safety engineer
R. Balhiser, assistant zinc plant superintendent
L. Powell, acting zinc casting superintendent
H. Lundberg, chairman
V. Smerker, shop steward
R. McArdle, shop steward
L. Farmer
L. Akers
R. Beatty
V. Blomstrom
D. Swenson
A. Morrow
R. Fisher
D. Koch
E. Goff
R. Larson

The minutes of the previous meeting were read and approved.

FINISHED BUSINESS

Charge slides on No. 2 furnace and No. 4 furnace have been barred out.
Aprons on mold racks have been checked.
Shop mule has been repaired.
Cable on the controls of No. 3 charge hoist has been fixed so that the operator does not walk under the cathode bundles when hoisting them.

UNFINISHED BUSINESS

The floor south of No. 2 furnace mold rack will be repaired when operations permit.
A platform will be installed along the south side of the upper dross drag chain, and cleanout holes will be cut in the chain cover.

NEW BUSINESS

Smerker: Something should be done with the roof drain pipe by the dross drum.
[Handwritten note: Will repair.]
Farmer: A catwalk should be installed along west wall of casting for repairing hoist cables.
[Handwritten note: Will be done.]
Larson: A signal light should be installed by zinc-dust machine door where metal pots are being hoisted.

[Handwritten note: Will install.]

Mr. Borgreen showed some pictures of cuts and scratches, and explained how dangerous they could be if not taken care of.

H. E. LUNDBERG, *Chairman.*

SAFETY FIRST MEETING

The regular meeting of the zinc casting safety first committee was held in the zinc plant office on July 25, 1956, at 10:30 a. m.

The following were present:

R. Balhiser, assistant zinc plant superintendent.
L. Powell, acting zinc casting superintendent.
C. Borgreen, safety engineer.
J. Owings.
L. Sloan, chairman.
F. Wenner, union representative.
G. Tannehill.
K. Sakaye.
V. Fechter.
M. Elmore.
R. Lassila.
W. Oehrlein.
M. Harrington.
J. Whalen.

Minutes of the previous meeting were read and approved.

FINISHED BUSINESS

A warning light has been installed by zinc-dust machine where metal pots are being hoisted.

UNFINISHED BUSINESS

The floor south of No. 2 furnace mold rack will be repaired whenever operations permit.

A platform will be installed along the southside of the upper dross dragchain; cleanout holes will be provided in the chain cover.

Roof drain by dross drums will be fixed.

A catwalk will be installed along the west wall of the zinc casting building for repairing hoist cables.

NEW BUSINESS

G. Tannehill: Men are still walking near moving bundles on charge hoists. [Handwritten note: Will warn men again.] Plate across drain ditch for No. 1 furnace mold rack needs repairs. [Handwritten note: Will do.]

Mr. Elmore: Skimming hoe handles should be renewed.

[Handwritten note: Will repair.]

F. Wenner: Chuckholes in floor of casting building should be filled in.

[Handwritten note: Will be done as soon as possible.]

J. Whalen: A walkway is needed to facilitate clearing of Nos. 1 and 2 furnace flues.

[Handwritten note: Will build.]

Mr. Balhiser warned men about using water to cool return metal slugs.

Mr. Powell quoted an article, Taking It Easy from a safety magazine; warned against the hazards involved on the highways, in the water, and in sports during the summer vacations.

Mr. Borgreen lectured on falls; he spoke of the different types of falls, injuries involved, and the way to prevent them.

Meeting adjourned at 11:30 a. m.

L. SLOAN, *Chairman.*

Safety First Meeting

The regular meeting of the zinc casting safety first committee was held in the zinc plant office on August 8, 1956, at 10 : 30 a. m.

The following men were present:

L. Powell, acting superintendent, zinc casting
A. French, assistant safety engineer
J. Milliron, shop steward
H. Gurnsey, shop steward
J. Lander
W. Johnson
J. Rossi
G. Stack
G. Green
F. Johnson
B. Keough
D. Johnson

The minutes of the previous meeting were read and approved.

FINISHED BUSINESS

Men were told not to walk near bundles of cathodes when cathodes are being charged.

Skimming hoe handles have been renewed.

A walkway has been put along Nos. 1 and 2 furnace flues.

UNFINISHED BUSINESS

The floor south of No. 2 furnace mold rack will be repaired whenever operations permit.

A platform will be installed along the south side of the upper dross drag chain and cleanout holes will be provided in the chain cover.

The roof drain by the dross drums will be fixed.

A catwalk will be installed along the west wall of the zinc casting building for repairing hoist cables.

Chuckholes in floor of casting building will be filled.

[Handwritten note: Dove.]

The plate across the drain ditch north of No. 1 furnace will be repaired.

NEW BUSINESS

Milliron: Cathodes stick on cathode cars and are hard to get off.

Gurnsey: Canvas aprons on No. 3 furnace should be renewed.

[Handwritten note: Dove.]

Mr. French instructed the men on the different types of artificial respiration.

C. Murray, *Chairman.*

Safety First Meeting

The regular meeting of the zinc casting safety first committee was held in the zinc plant office on August 22, 1956, at 10 : 30 a. m.

The following men were present:

L. Powell, acting superintendent, zinc casting
C. Borgreen, safety engineer
S. Sloan, chairman
V. Smerker, shop steward
L. Lundquest
E. Kinney
A. Morrow
N. Poitra
C. Merriman
E. DeBolt
S. Merriman
D. Frey

FINISHED BUSINESS

Chuckholes in the floor of the casting building have been filled.

Canvas aprons on No. 3 furnace have been renewed.

The plate across drain ditch—No. 1 furnace repaired.

UNFINISHED BUSINESS

The floor south of No. 2 furnace mold rack will be repaired whenever operations permit.

A platform will be installed along south side of the upper dross drag chain, and cleanout holes will be provided in the chain cover.

The roof chain by dross drums will be fixed.

A catwalk will be installed along the west wall of the zinc casting building for repairing hoist cables.

Mr. Carl Borgreen read an article on the use of salt tablets.

L. SLOAN, *Chairman.*

SAFETY FIRST MEETING

The regular zinc plant roasting department safety first meeting was held in the roaster lunchroom at 2 p. m., June 7, 1956.

The following members were present:

M. J. Villeneuve, superintendent of roasters, chairman
A. French, assistant safety engineer
L. Stickey, repair foreman, secretary
O. C. Hoffman, shift foreman
C. Jensen, shop steward
M. Edwards, roasters
D. Hiley, roasters
R. Stenberg, roasters
M. Thumm, roasters
C. Stillman, roasters
L. Short, roasters

UNFINISHED BUSINESS

The roof leaks above No. 18 McDougalls, coolers, crushers, No. 12 furnace, and in the unloading shed. (This is in the hands of the carpenter shop.)

A new type cleanout gate or opening is needed for the dross feed hopper at McDougalls. (This will be done as soon as the dross bin is empty.)

Door should be installed on cleanout openings on furnace bases. (This is in the hands of the boiler shop.)

Large openings to bays in calcine tunnel should be closed. (This is in the hands of the brick mason department.)

The insulation shell above the doors on No. 6 roaster should be raised upward. (This is in the hands of the boiler shop.)

The floor bands around the furnace should be welded to keep the dust from falling to the floors below. (This is in the hands of the boiler shop.)

FINISHED BUSINESS

The walkway to provide more room to get around the motor on No. 8 roaster has been put in.

A handrail has been installed at the end of the unloading platform on the calcine transfer.

The cover on No. 3 furnace pan feeder has been fastened.

NEW BUSINESS

Stillman: There should be a stretcher and first-aid box on the charge floor.

[Handwritten note: Safety department looking into this.]

Stenberg: There should be a handrail put in by the baghouse on the conveyor floor (fourth floor).

[Handwritten note: Will be done.]

Mr. Hoffman told the men to be careful when using a long bar to clean furnaces. Always make sure that there is enough room to maneuver the bar.

Mr. French warned the men about horseplay. There should be no horseplay at any time. Pay attention to safety rules and when doing work improperly accept good advice from your coworkers.

MAURICE J. VILLENEUVE, *Chairman.*

Safety First Meeting

The regular zinc plant roasting department safety first meeting was held in the roaster lunchroom at 2 p. m., June 22, 1956.

The following members were present:

C. Borgreen, safety engineer
L. Stickey, repair foreman, chairman
W. Gay, shift foreman, secretary
C. Jensen, shop steward
M. Wendt, roasters
P. Mansikka, roasters
R. Pautz, roasters
A. Larson, roasters
I. Salley, roasters
T. Fenson, roasters

UNFINISHED BUSINESS

The roof leaks above No. 18 McDougalls, coolers, crushers, No. 12 furnace, and in the unloading shed. (This is in the hands of the carpenter shop.)

A new type cleanout gate or opening is needed for the dross feed hopper at McDougalls. (This will be done as soon as the dross bin is empty.)

Large openings to bays in calcine tunnel should be closed. (This is in the hands of the brickmason department.)

The insulation shell above the doors on No. 6 roaster should be raised upwards. (This is in the hands of the boiler shop.)

The floor bands around the furnaces should be welded to keep the dust from falling to the floors below. (This is in the hands of the boiler shop.)

FINISHED BUSINESS

A dust-proof box for a stretcher is being made in the boiler shop, and as soon as it is completed a stretcher and first-aid box will be put on charge floor.

A hand rail has been installed by the baghouse on the conveyor floor (4th floor).

The following safety measures have been completed without being reported at the safety meeting:

A catwalk has been installed under vibrator on No. 3 roaster feeder hopper for safety of electrician.

Holes have been welded under drop holes of No. 7 furnace on feed floor to prevent dust from leaking down on men who are working on floor below.

NEW BUSINESS

Pautz: Sharp corners of railings of ladders between 5 and 7 hearths of furnace should be rounded off.

Jensen: Brooms and shovels should not be leaned against railings of ladders between furnaces because of danger of being hit on head when coming up ladders.

[Handwritten note: All items under new business have been taken care of.]

Jensen: Hinges and clasp should be changed on switch box by crushers on No. 7 track to other side to prevent being hit in face by door swinging back.

Mr. Borgreen discussed the accidents which had happened the previous month. He also discussed the merits of a new type safety shoe.

The meeting adjourned at 2:40 p. m.

Leo A. Stickey, *Chairman.*

Safety First Meeting

The regular zinc plant roasting department safety first meeting was held in the roaster lunchroom at 2 p. m., July 5, 1956.

The following members were present:

M. J. Villeneuve, superintendent, roasters
C. Borgreen, safety engineer
L. Stickey, repair foreman, chairman
E. McCann, shift foreman, secretary
C. Jensen, shop steward
S. Smith, roasters

H. Cole, unloading
M. Cassell, roasters
J. Fabre, roasters
J. Hardiman, roasters
W. Antonich, roasters
H. Bruno, roasters

UNFINISHED BUSINESS

The roof leaks above No. 18 McDogualls, coolers, crushers, No. 12 furnace, and in the unloading shed. (The roof is being repaired.)

A new type cleanout gate or opening is needed for the dross feed hopper at McDougalls. (This is being done.)

Large openings to bays in calcine tunnel should be closed. (This will be done.)

The insulation shell above the doors on No. 6 roaster should be raised upward. (Will do.)

The floor bands around the furnaces should be welded to keep the dust from falling to the floors below. (Will do.)

FINISHED BUSINESS

A dust-proof box for a stretcher has been ordered.

A stretcher and first-aid box will be put on the charge floor.

Sharp corners of railings of ladders between 5 and 7 hearths of furnaces have been rounded off.

Hinges and clasps on switch box by crushers on No. 7 track have been switched to other side of box.

A railing has been put arount the ferromanganese pit.

NEW BUSINESS

Bruno: Eyewash bottles and eyewash glasses should be kept on the charge floor and furnace floors at all times.

[Handwritten note: New style bottles will be used.]

Hardiman: Roof leaks over ladder at lower dust pump.

[Handwritten note: Will repair.]

Mr. Borgreen talked on the care and handling of tools; the picking up and cleaning up of all scrap and pop bottles, also the reporting of all injuries, cuts, and bruises to first aid or the foreman.

LEO A. STICKEY, *Chairman.*

SAFETY FIRST MEETING

The regular zinc plant roasting department safety first meeting was held in the roaster lunchroom at 2 p. m. on August 2, 1956.

The following members were present:

R. H. Balhiser, assistant superintendent zinc plant
M. J. Villeneuve, superintendent roasters
A. French, assistant safety engineer
L. A. Stickey, repair foreman, chairman
W. E. Gay, shift foreman, secretary
C. Jensen, shop steward
S. Ward, roasters
R. Pautz, roasters
A. Anderson, roasters
C. Morse, roasters
R. Dewey, roasters

UNFINISHED BUSINESS

The roof leaks above No. 18 McDougalls, crushers, No. 12 furnace and in the unloading shed. (Will do.)

Large openings to bays in calcine tunnel should be closed. (Will do.)

The insulation shell above the doors on No. 6 roaster should be raised. (Will do.)

Floor bands around the furnaces should be welded to keep the dust from falling to the floors below. (Will do.)

Leaky doors on furnaces and furnace uptakes should be repaired. (Will do.)

FINISHED BUSINESS

The roof has been repaired above the coolers.

A new type cleanout gate has been installed at the McDougalls for the dross feed hopper.

A dust-proof stretcher has been installed on the west end of the charge floor.

The water fountains in the roaster building have been adjusted.

The burned out light on the south end of the bridge to the parking lot has been replaced.

NEW BUSINESS

Dewey: The light on the southwest corner of the east crane should be moved as it obstructs the craneman's view.

[Handwritten note: In process.]

Jensen: The wheels on the cement buggies should be keyed and the handles made longer.

[Handwritten note: In process.]

With the help of diagrams and charts Mr. French gave a short but interesting talk on how to handle and treat patients after an injury.

The meeting adjourned at 2:40 p. m.

L. STICKEY, *Chairman.*

SAFETY FIRST MEETING

The regular zinc plant roasting department safety-first meeting was held in the roaster lunchroom at 2 p. m. on August 16, 1956.

The following members were present:

J. P. Wynn, acting superintendent, roasters
A. French, assistant safety engineer
L. A. Stickey, repair foreman, chairman
E. McCann, shift foreman, secretary
G. Lucero
S. Smith
T. Nordwind
R. Paynter
W. Antonich
R. Fox

UNFINISHED BUSINESS

The roof leaks above No. 18 McDougall, crushers, No. 12 furnace and in the unloading shed. (This is being repaired.)

Large openings to bays in calcine tunnel should be closed. (This will be done.)

The insulation shell above the doors on No. 6 furnace should be raised. (This will be done.)

Floor bands around the furnace should be welded to keep dust from falling to floor below. (This will be done.)

Leaky doors on furnaces and furnace uptakes should be repaired. (This will be done.)

FINISHED BUSINESS

The light on the crane has been moved.

The cement buggies have been repaired.

The following safety measures have been completed without being reported in safety meeting.

A piece of expanded metal has been welded on northwest corner of elevator to keep men from putting hand on side rail, and possibly getting fingers caught by counterweight when elevator is in motion.

A bucket stand has been welded on iron scrap can to keep sample buckets out of walkway to elevator.

A walkway has been put along wall of steam plant to prevent men from walking over roof of old verb. tunnels.

Top of bins on Nos. 6 and 7 tracks for ferro material has been covered.

Handrail on stairway of cooler floor by No. 8 furnace has been repaired.

NEW BUSINESS

Lucero: Something should be done to decrease the dust in the air in the elevator shaft.

Mr. French congratulated the department on making July an accident-free month. He gave a talk on the various factors involved in the frequency of accidents.

The meeting adjourned at 2:30 p. m.

LEO A. STICKEY, *Chairman.*

SAFETY FIRST MEETING

The regular zinc plant roasting department safety-first meeting was held in the roaster lunchroom on August 30, 1956, at 2 p. m.

The following members were present:

M. J. Villeneuve, superintendent, roasters, chairman
A. French, assistant safety engineer
L. Stickey, repair foreman, secretary
G. Roesner
C. Jensen, shop steward
C. Marsh
J. McManus
M. Edwards
D. Reed
R. Walsker
G. Robinson

UNFINISHED BUSINESS

The roof leaks above No. 18 McDougall, No. 12 Furnace and in the unloading shed. (This is being repaired.)

Large opening to bays in calcine tunnel should be closed. (Will do.)

The insulation shell above the doors on No. 6 furnace should be raised. (Will do.)

Floor bands around the furnaces should be welded to keep the dust from falling to the floors below. (Some have been welded, the others will be.)

Leaky doors on furnaces and furnace uptakes should be repaired. (Will do.)

FINISHED BUSINESS

The roof, over the crushers has been repaired.

NEW BUSINESS

D. Reed: Roof vents should be installed, over Nos. 1 to 3 furnaces, to remove gases. Something should be done to remove the dust from the east end of the calcine tunnel when pulling calcine from roasters 11, 12, 13, 14. This dust all goes to the second floor and when the furnace tender is cleaning his furnace he cannot see. On the same principle the dust escaping from the cooler charge floor and going up the elevator shaft raises cain with the men on the east end of the charge floor.

Mr. French gave a talk on safety-first practices and showed the men, by means of charts, how this could be applied when working at home.

The meeting adjourned at 2:45 p. m.

MAURICE J. VILLENEUVE, *Chairman.*

[Handwritten note: Most of the above under new business will be taken care of under the remodeling program. September 12, 1956.]

Mr. METCALF. I think our final witness is Mr. Johnson, who is going to be accompanied by Mr. Reese from the Bureau of Mines. We will recall them to answer some questions that have arisen in the course of this hearing.

STATEMENT OF JOHN A. JOHNSON, CHIEF OF THE DIVISION OF SAFETY OF THE BUREAU OF MINES, ACCOMPANIED BY SETH T. REESE, CHIEF OF THE BRANCH OF ACCIDENT ANALYSIS, DIVISION OF SAFETY; AND JOHN C. HACHISAK, SURVEY STATISTICIAN OF THE BRANCH OF ACCIDENT ANALYSIS OF THE DIVISION OF SAFETY OF THE BUREAU OF MINES

We are glad to have you back here, Mr. Johnson, and will you identify your colleagues for the reporter?

Mr. JOHNSON. On my left is S. T. Reese, who is the Chief of the Branch of Accident Analysis of the Bureau of Mines.

On my right is John Machisak, who is Mr. Reese's assistant.

Mr. METCALF. Now, during the course of the hearings—I think that you were in attendance at all times—certain questions have come up. Do you have any regular statement to make before you are interrogated by members of the committee?

Mr. JOHNSON. First I would like to answer a question that Mr. Rhodes asked on Monday. That was in reference to table J, I think, that I submitted, and it showed the ups and downs in your fatality frequency, and nonfatality rates over several periods. Mr. Rhodes asked if we could tell why these rates went up and down. I have looked in our literature and I have talked to Mr. Reese, and to Mr. Machisak, and other people of the Bureau and I don't think we can give that answer. It would be too much of a guess.

Then there was a question Mr. Elliott asked this morning. I have that information here in pencil. I think Mr. Elliott asked how many men are employed in the metal and nonmetal industry, divided up as to underground, open pit and surface.

Mr. ELLIOTT. That is right.

Mr. JOHNSON. I can give you that figure.

For the total of metal and nonmetal mines in the United States, it is 39,547 men employed underground, and 23,984 men employed in open pits, and 15,889 men employed on the surface, and 79,420 men total. That does not include quarries or metallurgical plants.

Mr. ELLIOTT. It does not include coal mines, of course.

Mr. JOHNSON. No; it does not include coal mines.

Mr. METCALF. Is that all of your statement?

Mr. JOHNSON. I think those are all of the questions that I had to answer, Mr. Metcalf.

Mr. METCALF. Now, you heard Mr. Elliott, of Alabama Steelworkers Union, testify that he had asked for help for his union, and had asked for help from the Bureau of Mines and the local representative of the Bureau in Alabama had told them, the members of the union, that they could not go in to that particular mine or inspect it unless they were invited by the mine owner or the operator. What is the policy of the Bureau of Mines when you receive a complaint such as the one that was made by that union.

Mr. JOHNSON. In my personal experience on similar occasions, when I was up in Duluth, Minn., we received a few similar requests from the unions and we would send a man down and he would talk to the company officials, and he would go in and make the investigation and write a report and copies of the report would be given to the union and to the mining company.

In my experience in the field, I have never been refused, or any of the men that worked under me up in Minnesota, of ever having refused to go in and make such an investigation. I am not familiar with the situation that Mr. Elliott described down in Alabama.

Mr. METCALF. You do not make it a practice to go only into a mine when you are invited by the mineowner?

Mr. JOHNSON. No.

Mr. METCALF. You would institute an investigation if from some other source you felt that there was need for an investigation into an unsafe or a hazardous condition?

Mr. JOHNSON. Usually in our work in metal and nonmetal mines, our field staff is spread quite thin. We teach first-aid classes and mine-rescue classes and accident-prevention classes, and we attend safety meetings and we give out safety awards, and conduct demonstrations on various safety hazards, and so forth. When our men are around these mines and have a few hours to spare, they will ask permission to go into a mine and see what is new in that mine, and they are always welcome and we never have been refused.

Then, occasionally, if they see something that looks like a hazard, they will discuss it right on the job with the foreman or the management or whoever is with them. We don't have enough men in that work to go in and make inspections similar to what is made in coal mines. We don't do that. We have to make it in cases, where if you had an unusual type of accident, or probably 2 or 3 men killed in an accident, then we will proceed to the scene of that accident immediately and make an investigation and write a report.

Mr. ELLIOTT. If you were not allowed to go into the mine, you couldn't go in and make that investigation?

Mr. JOHNSON. That is right.

Mr. RHODES. Do you know of any cases of your own knowledge where the Bureau of Mines people were kept out of a mine?

Mr. JOHNSON. Just the one I heard the other day, and I am not familiar with that at all. I have been in the Bureau of Mines, in the Safety Division, for 20 years, and I don't know of one specific instance of myself or the men working with me that have been refused admittance to a mine.

Mr. ELLIOTT. You say you don't know of one, or you know of only one?

Mr. JOHNSON. I don't know of any.

Mr. METCALF. That is from your experience in the Lake Superior area?

Mr. JOHNSON. I was in Butte, Mont., for 3 years, from 1942 to 1945, and I was in Pittsburgh for the first 2 years, 1936 to 1938, and I did research work at our testing area from 1938 to 1942 and I was in Duluth, Minn., from 1945 to this February, when I came to Washington.

Mr. METCALF. We have been somewhat disturbed by the fact that printed reports and the statistics assembled by the Bureau of Mines have been so far behind that we are never operating on current information. Can you tell us something about the problems you have in assembling that, and make some suggestions for our benefit to either work in this committee or as Members of the Congress to assist some of the other members of other committees in alleviating that situation?

Mr. JOHNSON. I think I can start out and make a few statements, Mr. Metcalf, and then I think probably Mr. Reese and Mr. Machisak can give you more detailed information if you want. First, up to 1942 we published bulletins such as Bulletin 461 which I introduced on Monday, and Mr. Stern introduced yesterday. Those bulletins contain very detailed accident statistics for the subjects contained in them. In 1942, because of probably an overload of other work, and I can't say for sure because I wasn't down here at that time, but probably because of overload of work of other types these bulletins were discontinued for the time being.

Then at that time, about 1941, our first coal-mine inspection started and as that built up we had to, by the law, issue certain monthly and annual reports on coal-mine statistics. That took up a lot of our work, and of course that was in the law and so that came out first. The other work just backlogged and piled up.

From that time up to now I would say, and Mr. Reese can check me on this, I don't think that our staff has increased at all. We have the same staff, and our work has been building up. I think we have been putting out more work per man during the years but we haven't been able to keep it up to date the way we would like to do.

Of course if we want to put out more work, we would have to have more people. That is about the only thing I can say on that.

Mr. ELLIOTT. Could you estimate how much additional staff might be needed if we were to pass one of these bills now before us?

Mr. JOHNSON. Probably Mr. Reese could answer that better than I could.

Mr. REESE. We would almost have to double our staff.

Mr. ELLIOTT. What part do you mean?

Mr. REESE. The Branch of Accident Analysis. We have 10 right now. They are statistical clerks, and we also have a machine section, that is where we process the information collected on cards or punchcards. That would have to be increased. The equipment would have to be increased to take care of the increased load. The equipment may not have to be doubled but I would say it would have to be increased at least one-third. But the staff would have to be increased, probably doubled, and there is no question about that. That is, to get the work out currently.

Mr. METCALF. What about inspectors?

Mr. REESE. I cannot answer that question.

Mr. JOHNSON. You mean how many inspectors would we need if this bill were passed?

Mr. ELLIOTT. In addition to what you already have.

Mr. REESE. I made an estimate on that, based on the number of mines, the nonmetal mines, and quarries and metallurgical plants and refineries and so forth. We came up from Mr. Reese's branch with about 6,000 such mines and plants and facilities. In order to inspect each of these facilities at least once a year, we would need a staff of about 200 fieldmen, what we would call inspectors, and most of those we would want to be engineers.

Mr. ELLIOTT. In addition to what you have now?

Mr. REESE. Yes.

Mr. ELLIOTT. How many do you have now?

Mr. REESE. In the field at this time, counting safety instructors and safety representatives and mining engineers that are doing what we call safety educational work in metal and nonmetal mines, we have about 50 fieldmen.

Mr. ELLIOTT. If you pass this bill, you would need 200 more?

Mr. REESE. That is right.

Mr. ELLIOTT. I guess this is in a separate branch, but how many do you have working in the coal mines?

Mr. JOHNSON. I am not quite sure of the figure but I think that we have 250 inspectors.

Mr. ELLIOTT. You wouldn't need with an industry only employing one-fourth of what the coal mines employ, the same number of inspectors, would you, Mr. Johnson?

Mr. JOHNSON. Not quite, but what we are basing it on is this: A lot of our metal mines, especially the mines out in Butte, are quite large. You have several different levels you are working on, and some of those mines, if I remember correctly from when I worked there, had as many as 800 or 900 or 1,000 men in a mine. When our inspectors go in and make a safety inspection, they visit every working place, and it may take them as much as 2 or 3 weeks to complete good safety inspections. Then anywhere from a week to 10 days to write a report covering that inspection. The smaller mines, perhaps you might go to a small open-pit mine, and you could probably inspect it in 1 or 2 days and write the report in 1 or 2 days. On that basis, from past experience, we arrived at an average of 6½ days to make an inspection and write a report on each of those 6,000 facilities.

Mr. ELLIOTT. You are an expert in the field, but I doubt the validity of your conclusion there.

Mr. RHODES. Actually doesn't it take about as long to inspect a lot of these small mines as it would a fairly large one? You have the matter of traveling, and so on and so forth, and the nonmetallic mines, I imagine you will have more installations to inspect than you would the metallic mines.

Mr. JOHNSON. You mean more metal and nonmetal than coal? I think that we would. If we count quarries and plants, I think that we would, and I think that there would be more in the noncoal group.

Mr. RHODES. And scattered over more territory.

Mr. JOHNSON. Yes, and our travel, up in Minnesota, our men have to—sometimes it takes 2 hard days by car to get to a mine, and in some of your coal mines you can get out there in half an hour.

Mr. ELLIOTT. The coal mines are larger. I was in a large coal mine in Alabama not long ago, and I am not sure how many people they had, but I get the impression that they have several hundred people in that mine. Of course, it is a very modern mine, and it doesn't take too long to go through it. Your coal mines have the benefit of being concentrated, and you don't have the distances, and that might make up for the difference. You might get your 6½ days on account of the distance between them.

However, many of the smaller mines I have observed in the metallic and nonmetallic field don't appear to be very complicated affairs, certainly no more so than the small coal mines.

Mr. JOHNSON. That is why I base the average on that. You can take a very large mine, like some of those mines in Butte and if one

man made a thorough inspection of one of the largest mines and wrote a complete report, that is on the first inspection, and you are trying to get all of the details, he would only make one inspection a month. Probably the second time he would go back there it wouldn't take him as long to write the report because he wouldn't have to complete all of the detailed information. But we went through that during the war. I was located in Butte, and there were about 4 or 5 inspectors in that office, and we inspected the mines in Butte for fire hazards and sabotage and things like that. We didn't go in to all of the working places. One of those large mines, 2 of our men spent 1 week, and they didn't go in to the working places, they just took the transformers and the electrical equipment.

Mr. ELLIOTT. You have 50 men in that field now, and if you added 200 more to that, would you necessarily make the cost approximately 5 times what it is now?

Mr. JOHNSON. I have an estimate on the cost, also. I base that on the new automobiles we would need, and the various equipment we need for these engineers, for checking ventilation and gases and dust and things like that. Also there would be additional clerks and a few more men in the Washington office, and on the basis of 1 inspection per facility of these 6,000 facilities, 1 inspection a year for every one of them, the cost would be about $2,600,000 the first year.

Mr. ELLIOTT. As against what? What is your present cost?

Mr. JOHNSON. I think right now, with what we call our safety educational program alone, I am not sure of these figures now, but I think it is somewhere around $300,000.

Mr. ELLIOTT. You would increase the cost nearly 9 times if the $300,000 figure is correct.

Mr. JOHNSON. That is correct. That is the first year's cost I gave you, and of course the second year you would not have to buy all of that new equipment and automobiles and things like that.

Mr. ELLIOTT. Do you have any estimate on the second-year cost?

Mr. JOHNSON. I did not make an estimate on the second year's cost, but it would drop.

Mr. ELLIOTT. The $2.6 million figure includes the cost of automobiles and equipment?

Mr. JOHNSON. Yes, needed for the various jobs.

Mr. ELLIOTT. Why is the Bureau of Mines opposed to this legislation, Mr. Johnson?

Mr. JOHNSON. I don't think that I can answer that question, Mr. Elliott. That is a policy question, and I don't think that I could answer it.

Mr. RHODES. Mr. Johnson, do you have any figures which would tend to indicate the effectiveness of the mine-safety program in the coal mines? That is, accident figures subsequent to the enactment of the Mine Safety Act as against accident figures for the years before the enactment of the act.

Mr. REESE. We haven't them with us, but we could make them available.

Mr. RHODES. Could you submit those for the record?

Mr. REESE. Oh, yes, we can do that.

Mr. JOHNSON. I question whether they run back that far.

Mr. RHODES. Mr. Elliott has suggested that since it has been 4 years since the mine-safety law went into effect, that you analyze those 4 years as against the preceding 4 years.

Mr. REESE. We can do that.

Mr. METCALF. If you will supply those for the record before the cutoff date of the 17th, we will appreciate it.

Mr. REESE. We will be glad to do that.

(Additional statistical information requested by the chairman was subsequently supplied and is as follows:)

TABLE 1.—*Injury experience of the coal-mining industry—4 years before and after H. R. 2082 (Public Law 49)*[1]

Year	Man-hours (thousands)	Number of injuries			Frequency rates[2]		
		Fatal	Nonfatal	Total	Fatal	Nonfatal	Total
1938	695,599	1,105	49,636	50,741	1.59	71.36	72.95
1939	760,039	1,078	51,773	52,851	1.42	68.12	69.54
1940	840,416	1,388	57,776	59,164	1.65	68.75	70.40
1941	921,536	1,266	61,057	62,323	1.37	66.26	67.63
Total	3,217,590	4,837	220,242	225,079	1.50	68.45	69.95
Average	804,398	1,209	55,061	56,270	1.50	68.45	69.95
1942	1,021,078	1,471	66,774	68,245	1.44	65.40	66.84
1943	1,034,541	1,451	64,594	66,045	1.40	62.44	63.84
1944	1,078,474	1,298	63,691	64,989	1.20	59.06	60.26
1945	958,591	1,068	57,117	58,185	1.11	59.58	60.70
Total	4,092,684	5,288	252,176	257,464	1.29	61.62	62.91
Average	1,023,171	1,322	63,044	64,366	1.29	61.62	62.91

[1] Enacted May 7, 1941.
[2] Per million man-hours.

TABLE 2.—*Injury experience of the coal-mining industry—4 years before and after S. 1310 (Public Law 552)*[1]

Year	Man-hours (thousands)	Number of injuries			Frequency rates[2]		
		Fatal	Nonfatal	Total	Fatal	Nonfatal	Total
1949	642,476	585	35,405	35,990	0.91	55.11	56.02
1950	711,390	643	37,264	37,907	.90	52.38	53.29
1951	697,247	785	35,553	36,338	1.13	50.99	52.12
1952	593,698	548	30,074	30,622	.92	50.66	51.58
Total	2,644,811	2,561	138,296	140,857	.97	52.29	53.26
Average	661,203	640	34,574	35,214	.97	52.29	53.26
1953	513,594	461	24,258	24,719	.90	47.23	48.13
1954	387,950	396	17,718	18,114	1.02	45.67	46.69
1955 (preliminary)	400,870	417	19,570	19,987	1.04	48.82	49.86
1956[3]	270,000	307	12,720	13,027	1.14	47.11	48.25
Total[4]	1,572,414	1,581	74,266	75,847	1.01	47.23	48.24
Average[4]	428,451	431	20,236	20,667	1.01	47.23	48.24

[1] Enacted July 16, 1952.
[2] Per million man-hours.
[3] January–August (8 months).
[4] 3⅔ years.

TABLE 3.—*Injury experience of the coal-mining industry, 1930–56*

Year	Man-hours (thousands)	Number of injuries			Frequency rates [1]		
		Fatal	Nonfatal	Total	Fatal	Nonfatal	Total
1930	1,102,902	2,063	99,981	102,044	1.87	90.65	92.52
1931	883,286	1,463	77,958	79,421	1.66	88.26	89.92
1932	699,125	1,207	56,283	57,490	1.73	80.50	82.23
1933	792,847	1,064	59,129	60,193	1.34	74.58	75.92
1934	855,487	1,226	65,559	66,785	1.43	76.63	78.06
1935	819,143	1,242	63,426	64,668	1.52	77.43	78.95
1936	926,305	1,342	67,540	68,882	1.45	72.91	74.36
1937	912,435	1,413	66,259	67,672	1.55	72.62	74.17
1938	695,599	1,105	49,636	50,741	1.59	71.36	72.95
1939	760,039	1,078	51,773	52,851	1.42	68.12	69.54
1940	840,416	1,388	57,776	59,164	1.65	68.75	70.40
1941 [2]	921,536	1,266	61,057	62,323	1.37	66.26	67.63
1942	1,021,078	1,471	66,774	68,245	1.44	65.40	66.84
1943	1,034,541	1,451	64,594	66,045	1.40	62.44	63.84
1944	1,078,474	1,298	63,691	64,989	1.20	59.06	60.26
1945	958,591	1,068	57,117	58,185	1.11	59.58	60.69
1946	879,628	968	55,350	56,318	1.10	62.93	64.03
1947	949,539	1,158	57,660	58,818	1.22	60.72	61.94
1948	898,231	999	53,472	54,471	1.11	59.53	60.64
1949	642,476	585	35,405	35,990	.91	55.11	56.02
1950	711,390	643	37,264	37,907	.90	52.38	53.28
1951	697,247	785	35,553	36,338	1.13	50.99	52.12
1952 [3]	593,698	548	30,074	30,622	.92	50.66	51.58
1953	513,594	461	24,258	24,719	.90	47.23	48.13
1954	387,950	396	17,718	18,114	1.02	45.67	46.69
1955	400,870	417	19,570	19,987	1.04	48.82	49.86
1956 [4]	270,000	307	12,720	13,027	1.14	47.11	48.25

[1] Per million man-hours.
[2] H. R. 2082 (Public Law 49), enacted May 7, 1941.
[3] S. 1310 (Public Law 552), enacted July 16, 1952.
[4] January to August (8 months).

TABLE 4.—*Costs of operating Branch of Accident Analysis, Division of Safety, Bureau of Mines*

Job title	Present			Proposed increase		Total present and proposed increase	
	Grade	No.	Cost (salary)	No.	Cost (salary)	No.	Cost (salary)
STATISTICAL SECTION							
Statistical officer (Chief)	13	1	$9,635			1	$9,635
Survey statistician (Assistant Chief)	12	1	7,570			1	7,570
Supervising statistical assistant	9	1	5,980	1	$5,440	2	11,420
Statistical assistant	6	3	13,725	1	3,670	4	17,395
Research assistant (statistical)	5	1	4,480			1	4,480
Statistical clerk	5	1	4,075			1	4,075
Do	4	1	3,840	2	6,830	3	10,670
Clerk-stenographer	4	1	3,585			1	3,585
Clerk-typing	4			3	7,245	3	7,245
Total (personnel)		10	52,890	7	23,185	17	76,075
MACHINE TABULATING SECTION							
Tabulating equipment operator (supervisor)	8	1	5,105			1	5,105
Card punch operator	3	2	7,370	1	3,175	3	10,545
Tabulating equipment operator (supervising assistant)	4			1	3,415	1	3,415
Tabulating equipment operator	3	1	3,430			1	3,430
Verifying machine operator	3			2	6,350	2	6,350
Total (personnel)		4	15,905	4	12,940	8	28,845
Machine rental cost			11,616		1,386		13,002
Total, Tabulating Section		4	27,521	4	14,326	8	41,847
Grand total, branch		14	80,411	11	37,511	25	117,922

Mr. FJARE. Mr. Johnson, testimony has been given on numerous occasions which pointed out the difficulty that the Bureau has in obtaining current and accurate data from the various States, and I think it has been pointed out that Montana's method of keeping statistics and the type of statistics they keep may vary from those of Arizona, and so forth. Is that true?

Mr. REESE. I don't think it is entirely different. It may differ in some respects, but they are all generally the same.

Mr. FJARE. Some of the charts that have been prepared here, but some of them had specific data which could be derived from one State and they had gone to another State and they couldn't get that data or it was unavailable.

Mr. REESE. We can give it for any State.

Mr. JOHNSON. I think that I can answer part of your question. Years ago, from 1911 to 1931, the method of computing frequency was based on 1,000 days and assuming a man would work 300 days a year. They would say, "We had so many accidents for each 1,000 man-days worked." In 1931 they changed that method of computing frequency and computed on the basis of how many men were injured per million man-hours worked. So it is hard to compare what we had prior to 1931 and what we had after 1931. In some places they still use that old method.

Mr. FJARE. What I had in mind, as I remember it—I believe that at the moment we were concerned, or, at least, members of the committee were concerned, with the accident rate for underground mining. I think the Mine, Mill, and Smelter people had these charts, and they were showing trends upward and downward. I think in the State of Idaho they couldn't get figures to separate open-pit from underground mining, whereas in another State—I think in the State of Arizona—they had specific underground mining as an illustration.

Of course, the reason was explained at that time from one State they could get the information they wanted and from the other they could not.

The argument now given by the numerous witnesses, particularly on the part of labor, in support of this legislation is that it would clear up a lot of these difficulties in obtaining information, and so forth, for the Bureau of Mines and for their use eventually.

The purpose of my asking the question, or to find out what sort of problem you face in that field, is this: Would further appropriations, an increased staff and a larger department for the Bureau of Mines, with that could you solve that problem which has been pointed up so many times during the course of these hearings, without this legislation?

Mr. JOHNSON. I think that we could. One of the questions brought up, I think it was yesterday, was that the statistics on coal mining are quite current, and there are monthly and annual reports, and the statistics are quite current.

Mr. FJARE. As a result of the mine-safety law.

Mr. JOHNSON. Yes. The law provides that these coal-mining companies must give us these statistics and we must publish them and get them out in publications. We could do the same with metal mining. In other words, we get a pretty good coverage, as I told you the other day, but we don't have the staff to compile all of this infor-

mation and to make all of the publications that we would like to put out.

Mr. FJARE. You do not feel it would be necessary to make it a compulsory Federal law to get these statistics, and all you would need is additional staff and facilities; is that correct?

Mr. REESE. Our coverage at the present time on the metal and nonmetal would run anywhere between 70 and 75 percent, or approximately that.

Mr. FJARE. You are talking about 75 percent of what?

Mr. REESE. The coverage of the operations, of the responses to our canvas. Whether the law would pep that up, I wouldn't be in a position to say.

Mr. ELLIOTT. What percentage do you get on the coal mines?

Mr. REESE. Eighty percent production, and we try to maintain 100 percent.

Mr. FJARE. Even with the law you only get 80 percent response?

Mr. REESE. On the production basis.

Mr. FJARE. How about accident reports and so forth?

Mr. REESE. We haven't looked into it that way yet, but we do have a production record and compare it with our coal economics, and what we collect is about 80 percent of what they collect, but we try to make it 100 percent. But when you go into these small mines, they are poor in reporting.

Mr. FJARE. Aren't they compelled by law in the coal-mining industry?

Mr. REESE. They are compelled by law to report.

Mr. FJARE. But they still do not do it?

Mr. REESE. That is right.

Mr. FJARE. The difference is about 5 percent. You say in the metal-mining industry you get about 75 percent response, and in the coal-mining industry about 80?

Mr. REESE. Approximately that.

Mr. JOHNSON. Now when I told you 75 percent, Mr. Machisak tells me that probably 2 years ago that 75 percent figure, coverage of all mines, was quite accurate. In the last few years, with these smaller uranium and vanadium mines, that figure may not be accurate. There are a lot of these small mines that have cropped up in the last few years and we haven't been getting those, and so maybe for this year probably that is too high. For 2 years ago that was a good approximation.

Mr. METCALF. You do not want to change your estimate of the production that is reported, or has that changed materially since these smaller mines have popped up?

Mr. JONES. I don't think the production figure is comparable, because the uranium production figure is small.

Mr. METCALF. You think about 90 percent of the production is being reported, but less than 70 to 75 percent of the firms involved.

Mr. REESE. That is about right.

Mr. METCALF. And 90 percent of the employees are covered.

Mr. JOHNSON. That is a better way of putting it.

Mr. METCALF. How much would it cost you under the present setup of your department to put out current reports with the information that you previously included in these bulletins?

Mr. JOHNSON. You mean in our Accident Analysis Branch that we are talking about?

Mr. METCALF. Yes; how much more would it cost to have current statistics available?

Mr. JOHNSON. Mr. Machisak thinks about 40 percent addition to what we have now.

Mr. METCALF. Forty percent addition to what? What is the amount that you have allocated on that Branch?

Mr. JOHNSON. I would say probably it is around $80,000 for that now, for accident analysis. In the various field offices, we have a man who belongs to another division, who collects statistics on production, and so forth, and he helps us collect our accident analysis statistics. So we have to pay him some of our money. Probably $80,000 is covering that work now.

Mr. RHODES. Would it not be better to ask that these gentlemen submit for the record, before the deadline, an outline as to what you would need in this Accident Analysis Branch, and the money involved to put the Branch in a position to put out the data for, say, 1956, so that we could have it by the middle of 1957? In other words, that is a goal to shoot at.

Mr. REESE. That is a good goal.

Mr. JOHNSON. I don't think that you could get that.

Mr. REESE. That is a yearly canvass, it is not a monthly canvass.

Mr. RHODES. But aren't the reports due by the end of 1956?

Mr. REESE. We would like to have them in by that time, yes.

Mr. RHODES. When do you usually get the reports? When do you get enough reports for 1956 so you could start to analyze the figures?

Mr. REESE. Around September or October of the following years. It is a fine goal to shoot at.

Mr. METCALF. Is that not the goal that you achieved in the coal mines?

Mr. REESE. Yes; we have achieved that in the coal mines.

Mr. METCALF. Would you supply for the record and for the information of the subcommittee, an estimate of the extra help and the amount of additional appropriation you would need in your department to have your information reasonably current under the definition that Mr. Rhodes has given, and to supply the information that was previously supplied in much greater detail? We had a complaint here about the fact that in recent years you have had much less information on safety than you previously published. Would you supply that for the record?

Mr. REESE. Yes, sir; we will do that.

Mr. MACHISAK. We are talking about collecting injury data from the metal and nonmetal operators. Now, bear in mind that that is voluntary data that the operator or owner submits, and no amount of money appropriated to the Bureau of Mines is going to make the operator fill out our schedule once he gets it.

Mr. METCALF. We have heard here all day from representatives of various mining associations and from the industry that they are ready, willing, and able to supply the data, and that there need be no Federal compulsion to provide it. All we have to do, they say, under the existing setup in the Bureau of Mines, is get enough people to compile it and collate it so that it will be currently available.

If we don't pass this legislation and put any compulsion or compulsory reporting, it is their contention this morning that we would still have the utmost cooperation on their part. If we don't pass this legislation but we do go before the Appropriations Committee and say, "We need some more money to do this job," we want to find out just how much we need. We understand that this is completely a voluntary reporting system. We have heard from the industry that they will continue to cooperate with you.

Mr. MACHISAK. I agree that if industry desires to cooperate and has a sincere interest in preventing accidents and injuries and that in itself is a selling program primarily, they will see the benefit of cooperating and it can be worked out that way. But the point I was trying to make is that money will not automatically give you greater coverage.

Mr. METCALF. Money will not automatically make people who refuse to cooperate and refuse to voluntarily report, force them to cooperate with your program.

Mr. MACHISAK. Neither will legislation, as evidenced in the coal mines. You still have an area there that is not completely covered, but it is 5 percent, or 2½ percent, or whatever it is. Some of the smaller coal mines you can't even locate from month to month, and they are digging in one hill one week and in the next hill the next week.

Mr. RHODES. Of course this may not be apropos, but the Gallup poll doesn't get the figures from every citizen of the United States, either. They get representative figures. Perhaps you can't get a decent picture from 50 percent reporting, but at the same time we on the committee find ourselves in a position that we don't particularly like, we are dealing with figures that are 2 and 3 years old. Up-to-date figures which merely show a trend would be useful to us. We recognize your difficulty and we want to do what we can to help you out of it. That is so that we can in turn do a little better job of legislating.

Mr. FJARE. I had one further question: Do you get uniform filling out of reports from the various companies when you make these surveys in the field?

Mr. REESE. We have a special questionnaire that we submit to each operation.

Mr. FJARE. And it is all uniform?

Mr. REESE. Yes, sir.

Mr. FJARE. They have no choice but to be uniform, is that correct?

Mr. REESE. That is right.

Mr. METCALF. I think that concludes the hearing unless you have something to add, Mr. Johnson or Mr. Reese. I think that concludes the statements. None of the subcommittee has any more questions.

As far as I know, unless there is something else to insert in the record at this time, that will conclude the present hearings being conducted by the subcommittee.

Mr. JOHNSON. Last week you asked me through Mr. Derrickson to supply, I think, five tables. We delivered those today.

Mr. METCALF. Those will be inserted at the point where the inquiry was made.

The record, as was previously stated, will be kept open until December 17 for further statements either by witnesses that were here or

letters or statements by interested parties subject to screening by the clerk of the committee and the chairman.

(Pursuant to the directions of the chairman, the following letters, prepared statements, etc., are made a part of the printed record:)

STATE OF COLORADO,
COMMISSIONER OF MINES,
Denver, November 30, 1956.

Hon. LEE METCALF,
Chairman, Congressional Subcommittee on Metal Mine Safety, House Committee on Labor and Education, Washington, D. C.

DEAR SIR: We are respectfully submitting for your consideration and information a copy of Bulletin No. 16: Colorado Mining Laws With Rules and Regulations and our latest annual report which is for the year 1955.

The mining safety rules and regulations were completely revised for the first time in some 30 years and after several printing delays distribution of bulletin No. 16 was started in January 1955. Bulletin No. 16 of the Colorado Bureau of Mines has been used by some foreign countries and several States as a basis for revising their existing laws or to formulate new safety codes. At the present time there are at least two States which are using the Colorado safety rules and regulations as guides for new safety laws to be enacted by them.

Since bulletin No. 16 was ready for distribution we have endeavored to place a copy in the hands of as many miners and mine operators as possible hoping, of course, that the rules and regulations would be studied and interested persons become familiar with them and with all other safety provisions.

The year 1955 was the safest in Colorado metal and mineral mining, there being only 12 fatalities in the entire mineral industry of the State. These fatalities were divided as follows: Underground mining, 6; mills, 1; quarry, 1; and oil wells, 4. The total of all accidents for the year including the 12 fatalities amounted to 1,191 for 34,976,600 man-hours of employment. The year of 1955 had the lowest number of permanent partial disabilities and occupational disease cases for many years. There were only 7 permanent partial disabilities and 5 occupational diseases.

During the past several years there has been a sharp decrease in the number of serious accidents as there has been in permanent partial disabilities and occupational disease. Minor accidents which include mostly cut and bruised fingers, mashed toes, slight cuts, and other lacerations remain about the same and most of these accidents cause a loss of time of less than 1 week. Accidents which cause a loss of more than 1 week have decreased until now there is only 1 accident for about every 100 men employed. For 1955, the frequency rate for all accidents in the mineral industries was 34.3 and accident severity rate 2.49.

When consideration is given to the fact that in the past 3 years from 5,000 to 7,000 men have gone into the mineral industries without previous experience Colorado has set a fine record for safety and the prevention of accidents.

Thanking you for your kind consideration of this letter, I am,

Yours very truly,

WALTER E. SCOTT, Jr.

SALT LAKE CITY CHAMBER OF COMMERCE,
Salt Lake City, Utah, November 30, 1956.

Hon. LEE METCALF,
Chairman, Special Mine Safety Subcommittee,
House Education and Labor Committee,
Washington, D. C.

DEAR MR. METCALF: We appreciate the important role of health and safety in the mining industry. Utah is to a large measure economically dependent on metallic and nonmetallic mining. Its welfare and growth is, therefore, of vital concern to us. For that reason we wish to comment briefly on the subject of the hearings of your subcommittee and to request that this letter be included in the hearing records.

The Utah State Industrial Commission has maintained an excellent record, over the years, in the field of safety education, promotion, and administration. It has broad powers of enforcement under which it has operated on a principle of cooperation between labor and management in the formulation of objectives and standards. The health and safety record of Utah's mining industry, under

this three-way cooperative effort, is impressive evidence of the effectiveness of our State health and safety program.

We strongly support the right of the State to control health and safety matters in the places of employment within its boundaries. We firmly believe that home administration of such matters is desirable in that more prompt attention can be given to specific and special problems, better and more rapid adjustment can be made to meet new conditions, and, finally, all groups involved, i. e., labor, management, and the State administrative body, are at home. The three groups are constantly aware of the problems, each desires to solve the problems, and all are readily available for cooperation.

In view of the nature of mine safety problems, the record of present attainment in the field, and the availability and objective interest of all parties concerned we again stress our continued support of full State control and administration of health and safety matters in metallic and nonmetallic mines and quarries. We oppose legislation providing Federal "inspections and investigations in metallic and nonmetallic mines and quarries," on the grounds that it would encroach on State's rights, it is unnecessary in light of the record, and it would be used as a stepping stone to Federal regulation and control of such matters.

Very truly yours,

GUS P. BACKMAN, *Secretary.*

NEW PARK MINING CO.,
Keetley, Utah, November 26, 1956.

Mr. RUSSELL C. DERRICKSON,
Chief Investigator, Education and Labor Committee,
House of Representatives, Washington, D. C.

DEAR MR. DERRICKSON: The New Park Mining Co. is an independent organization owned by thousands of stockholders scattered throughout the United States. We manage and operate one of the important nonferrous metal mines in the Park City, Utah, mining district approximately 30 miles east of Salt Lake City. We also have other varied interests in uranium and oil. The Park City operation has been a profitable operation for the past 17 years and has produced over a million tons of ore valued at over $30 million. In managing these operations we have naturally had considerable experience in relation to a comprehensive safety program.

As an independent mine operator we feel that the State industrial commission and the United States Bureau of Mines each have important functions in mine safety, but there is no reason for one group to encroach or assume duties of the other.

This statement is supported by figures on frequency and severity which show a good experience rating under present supervisory conditions. The national average for frequency and severity in metal mining for 1953–55 figures of 29.45 and 4,429 per million man-hours, respectively. Our New Park figures for the past few years are as follows:

Year	Frequency	Severity
1956 to date	28	1,400
1955	52	1,200
1954	76	2,000
1953	120	2,000
1952	94	1,900
1951	104	3,700
1950	119	2,600

Our frequency has been high, probably due to lack of company supervision of public medical facilities, which determine whether or not lost time is justified. Also, an operation of our size does not have light work jobs to which employees with slight injuries may be assigned. This results in more lost time. I wish to point out, however, that our severity rate has been low, indicating accidents have not been severe in nature.

Both the unions and company management in our area state they would like to be able to look to local or State legislative jurisdiction for mine-safety surveys and accident investigation. This type policy has provided immediate action when needed, both on investigation of accidents and determination or interpretation of policy. Both unions and the companies have personal interest in

activities of the State industrial commission which results in excellent cooperation of all three parties. We find that local conditions can best be served by regulating bodies that are close geographically and legislatively to our particular problem.

We feel that in our case particularly the State of Utah Industrial Commission has provided excellent supervision in mine-safety matters to the individual operator. At the same time we do appreciate the services of the United States Bureau of Mines in their research activities and the technical surveys provided our operations. We do feel that the present relationship between the State industrial commission and the United States Bureau of Mines provides an excellent service to the employees and the company. We strongly recommend that mine-safety inspection remain with the State, and we definitely oppose Federal legislation to change this relationship.

We are unable to be present for hearings regarding the proposed Federal inspection of metal and nonmetallic mining and quarrying operations. I understand that these hearings are scheduled for the first week in December, and I request that the information in this letter be made a part of the record.

Very truly yours,

NEW PARK MINING CO.,
CLARK L. WILSON,
Vice President.

NEWMONT MINING CORP.,
New York, N. Y., November 20, 1956.

Hon. LEE METCALF,
Member of Congress,
House Office Building, Washington, D. C.

MY DEAR MR. METCALF: We understand that the congressional subcommittee considering legislation providing for the Federal inspection of metal mines will conduct hearings in Washington next month, at which the metal-mine employers will be given an opportunity to express their views in connection with the proposed legislation. I am taking the liberty of addressing this letter to you in connection with our own mining operations, or those conducted by our affiliated companies in California, Colorado, and Washington, as well as other properties in which we are interested.

In each of these cases State mine inspection is provided, and we believe that the States have been doing an excellent job, both from the point of view of welfare of the workers and the cost of the program, but the primary responsibility for health and safety has been accepted and properly discharged by the operators. We have an excellent record in our mines in Grass Valley, Calif., where mine-safety and mine-rescue work has been emphasized for years.

We find that State inspection in each case has been thorough and effective, although somewhat on the strict side.

Under these conditions we can see no justification for adding a Federal inspection as an additional burden on the industry. It would constitute an unnecessary duplication and increase the expense of management. We hope that the committee will give careful attention to the information provided by the operators and conclude that Federal inspection of metal mines is neither necessary nor justified.

We shall greatly appreciate your careful consideration of the operators' point of view.

Respectfully yours,

CARROLL SEARLS,
Secretary and General Counsel.

UNITED PARK CITY MINES CO.,
Heber, Utah, November 28, 1956.

Mr. RUSSELL C. DERRICKSON,
Chief Investigator, Education and Labor Committee,
House of Representatives, Washington, D. C.

DEAR SIR: It is our understanding that hearings will be held during the first week in December in regards to passing legislation that would place supervision of the safety program for metal mines under Federal agencies. The management of United Park City Mines Co. wishes to express its views on this proposed legislation.

United Park City Mines is an independent operator located in the Park City district approximately 40 miles east of Salt Lake City. The property has operated since 1875 and has produced over 11 million tons of ore, with a revenue of $253 million. Employment has ranged between a few hundred and 2,000 underground employees during the years.

Our company maintains a safety program, and safety is one of our main interests. In addition to the program as it is administered underground, under the direction of our operating staff, our safety director holds open meetings once a month for the rank-and-file membership of all employees. Both union and company officials also participate. Incentives are granted for attendance and response is good. Problems of safety are discussed freely in these meetings, and quite often members of the Utah State Industrial Commission or the United States Bureau of Mines participate in the program. There is very good cooperation among local unions, the State industrial commission, and the company in connection with safety needs and regulations. We frequently call on members of the commission to help us with our problems and feel that they supply us with ample advice and instructions. Both the commission and the unions are in very close touch with the legislative bodies of the State and are in a position to recommend and put into existence regulations that may be needed from time to time.

We feel that the interests of the people and the metal-mining industry can be served more economically and effectively by local agencies than by the Federal Government. I am sure this is the attitude of the local unions, the Utah Industrial Commission, and the members of Utah's legislative bodies.

Kindly include this letter as part of the record of your hearings.

Very truly yours,

S. K. DROUBAY, *General Manager.*

HOUSE OF REPRESENTATIVES,
Washington, D. C., December 3, 1596.

Mr. ROBERT S. PALMER,
State Office Building, Denver, Colo.

DEAR MR. PALMER: This will acknowledge your letter of November 28, in opposition to bills providing for Federal inspection of metallic and nonmetallic mines.

It will be made a part of the record.

Very truly yours,

LEE METCALF.

STATE OFFICE BUILDING,
Denver, Colo., November 28, 1956.

Re House bill No. 9343, hearings on proposal for Federal inspection of metal mines

Hon. LEE METCALF,
Subcommittee Chairman, Committee on Education and Labor,
House Office Building, Washington, D. C.

DEAR MR. METCALF: The mining industry of the State of Colorado desires to express its appreciation for the committee's concern regarding the protection of health of metal miners and enforcement of safety rules and regulations in the metal mines of our State. The industry has taken the position for a great many years that mining should be conducted with the utmost safety precautions and that all known methods of prevention of accidents should be used. We have, on numerous occasions, successfully advocated changes in the safety code of the State of Colorado and believe that we have within the State a model safety code. We have also urged upon the legislature the passage of legislation which would provide for increased and more efficient inspection of our mines and believe that Colorado is among the leaders in this field and that we have some of the best mine inspectors in the country.

Experience records have been carefully studied by committees of the Colorado Mining Association and recommendations have been made not only to the industry but to the enforcement officers which have resulted in the elimination of many hazards which existed or may have caused accidents in the past. We believe that the mining industry is in the forefront in the adoption of all safety practices which are conducive to the avoidance of accidents.

For the above reasons, we desire to express disappointment at the committee's decision not to notify us of their visitation to the State as we would have

liked to have presented evidence to the committee which would have shown conclusively that we are adopting and have adopted the most modern up-to-date safety procedures and practices.

The State inspectors have insisted on the elimination, in every instance, of fire hazards which may have existed in the past at portals of tunnels which were constructed in the early days with the use of timber or lumber which was available at that time. These instructions have been carried out in every instance and in new installations every precaution has been taken to eliminate fire hazards near portals of tunnels or collars of shafts.

With regard to underground usage of diesel engines, careful studies have been made both by the industry and the commissioner of mines and conferences have been held within the State which have been attended by representatives of the United States Bureau of Mines and the State inspectors of most of the mining States. Standards have been established which have been prescribed by Federal agencies and have been enforced by State inspectors.

In cases where moving machinery is used, guards have been installed for the protection of workers. This practice has been insisted upon by mine management as well as by State inspectors.

In blasting procedure, instruction has been obtained from the topflight and most experienced men in the industry and only in those cases where inexperienced operators have been engaged in opening prospects has there been any evidence of justified criticism.

Some complaint regarding the use of various types of equipment has been received by the State mine commissioner but when these matters have been carefully analyzed by the commissioner and his investigating agents, these charges have been found to be without any foundation.

It should be noted that in the experience record, particularly in the record of fatal accidents, some of these accidents were caused from the transportation of managerial personnel in planes from mine to office or on prospecting expeditions. In such cases the industry was advised by the Colorado State Industrial Commission that these accidents are charged to the experience record of the metal-mining industry.

It is respectfully called to the attention of the committee that there has been an upsurge in activity in uranium mining in the State of Colorado and that a great many people engaged in this activity are inexperienced mining people—that of necessity, these people have made mistakes which have been corrected in almost every case by State mine inspection—but that this increased activity is undoubtedly reflected in the statistical studies which are here presented for and on behalf of the industry.

It is apparent from these studies that the severity and frequency of accidents during the last few years have been on the decrease and that up to and including the year 1955, the record shows the smallest number of fatal accidents. It is further emphasized here that the Federal Government at the present time has passed on to State commissioners and inspectors all of the data which it has acquired relating to the prevention of accidents and that there has been and still exists very close cooperation between State and Federal agencies in this regard—that at no time has the industry or any member of the industry refused access to a mining property of a Federal or State official investigating conditions which existed prior to or subsequent to an accident case.

It is respectfully pointed out further that no good would come from duplication of effort in this field of activity. There are not cases reported which have not been handled with a high degree of efficiency by State inspection. It is the feeling of the committee which has investigated the conditions throughout the mining industry of the State of Colorado that no advantage would be obtained from the passage of any Federal legislation which would provide for Federal inspection of metal mines.

The State of Colorado has adopted a Comprehensive Occupational Disease Insurance Act and there have been no cases called to our attention in which dangerous health hazards exist in mining operations within the State.

The industry has cooperated with the medical schools and health agencies in the study of working and health conditions throughout the mining industry and we are proud to report that conditions in the mines in Colorado are far better than they have been at any time in the history of the mining industry.

The industry welcomes the cooperation of the United States Bureau of Mines in this respect and has, at its annual meetings, invited the Federal agencies active in this field to have representation, and many of the reports which have

been submitted have been published by the industry and distributed throughout the mining camps of the State. In addition to that, the industry incites a desire on the part of those engaged in mining to better their safety records by a cooperative effort with the Colorado Industrial Commission in awarding each year at our annual meeting, safety plaques in recognition of accomplishment in the fields of safety practice.

It is therefore respectfully submitted to the committee that the committee table the legislation which is proposed and urge the United States Bureau of Mines to lend even fuller cooperation than it has in the past in a spirit of friendly understanding to the end that the splendid record which we believe we have established in Colorado can be excelled.

Yours very truly,

ROBERT S. PALMER.

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D. C., December 3, 1956.

MR. GUY A. PERKINS,
Chairman, Nevada Industrial Commission,
Carson City, Nev.

DEAR MR. PERKINS: This will acknowledge your letter of November 27, in opposition to bills providing for Federal inspection of metallic and nonmetallic mines.

It will be made a part of the record.

Very truly yours,

LEE METCALF.

NEVADA INDUSTRIAL COMMISSION,
Carson City, Nev., November 27, 1956.

HON. LEE METCALF,
Chairman, Special Subcommittee of House Labor Committee,
House office Building, Washington, D. C.

DEAR MR. METCALF: At a recent meeting of Nevada mining officials which I attended my attention was called to the fact that certain legislation has been proposed to provide for Federal inspection and investigation of metallic and nonmetallic mines to obtain information regarding health and safety conditions, accidents, and occupational diseases, etc. I should like very much to express my opinions regarding such proposed legislation, both as a private citizen and as a State official.

I believe that one of the main things that was brought out in the Hoover investigation of the operation of the Federal Government was the terrific overlapping of Federal agencies and State agencies. This legislation, in my opinion, would certainly create a condition of this type. Most of the States have recognized the terrific need for safety programs within their own States, and the legislatures, themselves, have been coming around to this thinking in the past few years.

Certainly our own legislature showed this concern when they created the industrial safety department within the Nevada Industrial Commission. The industrial commission is budgeting, at the present time, in the neighborhood of $100,000 per year to be devoted entirely to the safety program. So, certainly, we consider it a very serious problem and are going to do something about it.

At the present time, Nevada has at least four State agencies that are concerned with administering safety measures; namely, the mining inspector, the public service commission, the labor commission, and the Nevada Industrial Commission. The Federal Government moving in would possibly create a fifth, which could only mean extensive duplication of what is already being done. As it stands at the present time, these four agencies are definitely concerned with the particular phase of industry and safety that they are most familiar with and can do the best job of preventing accidents.

One strenuous objection I have is that this undoubedly would create another great bureau in Washington for the administration of these funds. The cost of this bureau would be tremendous. The research and regulation that this bureau would accomplish would probably be an exact duplication of what is happening in every State in the Union today. When the figures were available on the cost of administering this type of operation, undoubtedly there would be more and more demand that the Federal Government have more control,

and this would undoubtedly grow to be a monster that would be almost impossible to be rid of in later years.

In other words, I feel that while it is a worthy program from a humanitarian standpoint, the evils that it would create, and the expenses involved, as compared to the results that they possibly could receive from such a program, certainly would not balance each other. I am basing my thoughts entirely on the function of the Federal Government in other agencies in the past that have certainly proven that probably it could have been much better handled either by private enterprise or on the State level.

I certainly do not like to stress my feelings as a States righter to the point where they become impractical, yet, on the other hand, I feel that the States do recognize the problem and are doing something about it. The elimination of accidents and industrial hazards are very hard to measure, and the chances are the Federal Government would take all the credit for any improvement that might come in the next few years, when actually it is probably being accomplished by the States themselves anyway.

I fear that I have rambled on much too far, but to summarize very briefly—I'm against it.

Sincerely yours,

GUY A. PERKINS, *Chairman.*

VICTOR CHEMICAL WORKS,
Chicago, November 28, 1956.

Mr. RUSSELL C. DERRICKSON,
Chief Investigator, Committee on Education and Labor,
House of Representatives, Washington, D. C.

DEAR MR. DERRICKSON: Thank you for advising us of the hearings that the Subcommittee on Mine Safety Legislation is planning on holding next week. We will be unable to testify in person and are therefore preparing a written statement regarding Victor Chemical Works mining operation in Montana which will be forwarded to you later.

Very truly yours,

F. M. ANABLE, *Vice President.*

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D. C., December 3, 1956.

Hon. CHARLES H. RUSSELL,
Governor, State of Nevada,
Carson City, Nev.

DEAR GOVERNOR RUSSELL: This will acknowledge your letter of November 28, in opposition to bills providing for Federal inspection of metallic and nonmetallic mines.

It will be made a part of the record.

Very truly yours,

LEE METCALF.

STATE OF NEVADA,
EXECUTIVE CHAMBER,
Carson City, November 28, 1956.

Hon. LEE METCALF,
Chairman, Special Subcommittee House Labor Committee,
Washington, D. C.

DEAR CONGRESSMAN METCALF: I have been advised that your committee will conduct hearings in Washington, December 3 to 7, 1956, on bills providing for Federal inspection of metal and nonmetallic mines and quarries.

The Navada Industrial Commission and State mine inspector are opposed to any legislation authorizing inspection of metal and nonmetallic mines and quarries which would, no doubt, mean Federal legislation defining safety rules, regulations, etc., with reference to such mines.

As Governor of Nevada, I feel that the Nevada Industrial Commission and the State mine inspector of Nevada are perfectly capable of enforcing safety measures under powers already granted them by the laws of Nevada and that Federal inspection would mean duplication, overlapping and, if I may say so, an infringement upon States rights.

It is possible, even probable, that Federal inspection of coal mines may be necessary, as coal mines have hazards not prevalent in metal mines. We have no coal mines in Nevada.

Our larger metal mines have safety departments, well staffed by competent engineers, and our mine Inspector and his deputies are constantly examining all mines. They prescribe the safety rules and regulations to be observed.

For the above reasons, I feel that any Federal interference would work a hardship upon our metal and nonmetallic mining industry; that such inspection is unnecessary; and, therefore, I am opposed to it.

I feel sure that the position I have taken will be taken by the governors of the Western States, as all of them have proper facilities for enforcing safety in metal and nonmetallic mines and quarries.

Upon investigation, I think that you will find that all of such States insofar as metal mining is concerned, have an enviable safety record and that management is constantly endeavoring to improve such record.

To date, State mine inspection has been highly successful in obtaining safer working conditions and practices and I feel that any further regulations or control should come from the States and not from the Federal Government.

Sincerely yours,

CHARLES H. RUSSELL,
Governor of Nevada.

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D. C., December 3, 1956.

Mr. LOUIS D. GORDON,
Executive Secretary, Nevada Mining Association, Inc.,
Reno, Nev.

DEAR MR. GORDON: This will acknowledge your letter today in opposition to bills providing for Federal inspection of metallic and nonmetallic mines.

It will be made a part of the record.

Very truly yours,

LEE METCALF.

NEVADA MINING ASSOCIATION, INC.,
Reno, Nev., December 1, 1956.

Hon. LEE METCALF,
Chairman, Special Subcommittee, House Labor Committee,
Washington, D. C.

DEAR CONGRESSMAN METCALF: The Nevada Mining Association, Inc., an organization comprising practically all of the metal and nonmetallic mines in Nevada, at a special meeting of the board of directors on November 24, 1956, adopted a resolution, copy of which is enclosed.

The enclosed resolution was adopted by all nine members of the board of directors of the association.

I trust that you will give the resolution your best consideration.

Very sincerely,

LOUIS D. GORDON.

RESOLUTION BY BOARD OF DIRECTORS OF NEVADA MINING ASSOCIATION, INC., PASSED NOVEMBER 24, 1956

Whereas a special subcommittee of the House Labor Committee of the United States House of Representatives has scheduled hearings for December 3 to 7, in the year 1956, on bills providing for Federal inspection of metal and nonmetallic mines and quarries; and

Whereas many of our metal and nonmetallic mines have well organized safety departments in charge of competent safety engineers, and all mines in the State of Nevada are regularly inspected by the State mine inspector, and the laws of Nevada delegate to the State mine inspector and his deputies authority to enforce all safety measures relating to metal and nonmetallic mines; and

Whereas hazards exist in coal mines that are not incident to metal mining or nonmetallic mining; and

Whereas Federal inspection would create duplication, divided and overlapping authority, and could result in general confusion; and be it

Resolved, That the Nevada Mining Association is opposed to Federal inspection of metal mines and nonmetallic mines and quarries; that our laws governing safety in such mines are adequate; that the State mine inspector and his deputies are capable of enforcing all safety measures in such mines; and that such Federal inspection would be a further encroachment upon the rights of the States in which metal and nonmetallic mines and quarries are in operation.

NEVADA MINING ASSOCIATION, INC.,
By LOUIS D. GORDON,
Executive Secretary.

HOUSE OF REPRESENTATIVES,
Washington, D. C., December 3, 1956.

Mr. MERVIN J. GALLAGHER,
State Inspector of Mines,
Carson City, Nev.

DEAR MR. GALLAGHER: This will acknowledge your letter of November 28, in opposition to bills providing for Federal inspection of metallic and nonmetallic mines.

It will be made a part of the record.

Very truly yours,

LEE METCALF.

STATE OF NEVADA,
OFFICE OF INSPECTOR OF MINES,
Carson City, November 28, 1956.

Hon. LEE METCALF,
Chairman, Special Subcommittee, House Labor Committee,
House Office Building, Washington, D. C.

DEAR CONGRESSMAN METCALF: It has recently been brought to my attention that hearings are to be held on Federal inspection and investigation of metallic and nonmetallic mines and quarries for the purpose of obtaining information relating to health and safety conditions, accidents, occupational diseases, etc.

This department is of the opinion that such legislation would be a needless duplication of work done by this office and by other Nevada State agencies, and it certainly would be an infringement upon States rights.

In September of 1956 I attended a diesel seminar in Denver, Colo., together with representatives from the office of practically every State mine inspector in the western States. During the course of the session the Western State Mine Inspectors Association, without a dissenting vote, agreed wholeheartedly to oppose any legislation authorizing Federal control of safety measures in metallic and nonmetallic mines within the States.

Nevada experienced difficulty with Federal inspectors, enforcing powder-magazine regulations, during the Second World War. Much feeling was aroused in the mining industry when these inspectors began overstepping their field of authority and making recommendations to mine operators beyond the authority granted them by Federal regulations. Federal inspectors, added to State inspectors, would, from experience, create divided authority and work against the proper administration of our State mining laws. The end result would, I feel, be detrimental to the health, safety, and welfare of the workers and the benefits they now derive from proper State control and the cooperation existing between this office and mine operators.

Nevada law provides that the State inspector of mines enforce the laws and statutory rules and regulations regarding the health, safety, and welfare of all persons engaged in the mining industry of Nevada and for the procurement of statistical information necessary and pertinent thereto.

Section 4218 (NCL 1929), section 2, as amended, contained in the 1951 Statues of Nevada, page 170, reads:

"SEC. 11. The inspector of mines shall, on the first day of August in the year 1952, and in every second year thereafter, file with the Governor of the State the original draft of a report giving:

"First: A list of all fatal accidents that have occurred during the 2-year period, and the nature and cause of the same, together with the names of the persons fatally injured; also a summary of nonfatal accidents that have been reported to the inspector of mines during the 2-year period.

"Second: The number of mines visited or examined during the 2-year period, the number of mines currently in operation, the number, names, and location of mines that have become idle during the 2-year period, and the total number of men currently employed.

"Third: The name, location, and address of each currently active mine in the State which has been examined and from which the inspector has received a report as provided in section 6 of this Act, together with data as to the manner of working the same, the number of men currently employed, and the products produced or being developed for production.

"Fourth: The number and character of notices served, together with suggestions and recommendations made; the manner in which such suggestions and recommendations were complied with.

"Fifth: The number of complaints received and the actions therein.

"Sixth: The number of prosecutions for neglect or refusal to comply with notices.

"Seventh: A summary of the reports received from mineowners and deputy inspectors.

"Eighth: A full statement containing all available statistical and other information calculated to exhibit the mineral resources of the State and to promote the development of the same.

"Ninth: Generally, such other information and suggestions as may be deemed advisable."

The biennial report, after submission to the Governor, is then printed and distributed to all interested persons and copies are always obtainable upon request from this office. The nonfatal accidents noted in the above report are broken down by counties, by months, by severity, by agencies, by types of accidents, by nature of injury, by site of injury, and by employers. Current statistical information is always available in this office on any of the above subjects.

Sincerely,

MERVIN J. GALLAGHER,
State Inspector of Mines.

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D. C., December 3, 1956.

Mr. MAX W. BOWEN,
Executive Vice President, The Golden Cycle Corp.,
Colorado Springs, Colo.

DEAR MR. BOWEN: This will acknowledge your letter of November 30 in opposition to bills providing for Federal inspection of metallic and nonmetallic mines. It will be made a part of the record.

Very truly yours,

LEE METCALF.

THE GOLDEN CYCLE CORP.,
Colorado Springs, Colo., November 20, 1965.

Re House bill H. R. 9343, or
Re hearings on proposal for Federal inspection of metal mines.

Hon. LEE METCALF,
Subcommittee Chairman, Committee on Education and Labor,
House Office Building, Washington, D. C.

DEAR MR. METCALF: My name is Max W. Bowen, mining engineer, executive vice president and general manager of The Golden Cycle Corp. I have been in the mining and milling business for the past 32 years, mainly in Colorado, but have also made occasional mine examinations throughout the western area of the United States. I have also served in a consulting capacity both in mining and milling.

We, in the mining industry in the western area, are quite familiar with the safety practices of both employers and employees and although there may have been a woeful lack of safety-mindedness in the twenties and thirties at a few of our mines, this condition has been corrected during the past 25 years. The State mine inspectors and the United States Bureau of Mines safety engineers have played a most important part in bringing about this change. A number of the larger operators have a complete safety engineering staff and conduct regular classes in first aid and in the smaller operations the engineering staff

has either taken first-aid instructions from the United States Bureau of Mines or from some other competent instruction agency.

Colorado enacted legislation called the Comprehensive Occupational Disease Insurance Act which is to protect the health of employees and the provisions of this act are rigorously enforced by both employers and the State mine inspectors. The most prevalent occupational disease encountered in the mining industry is silicosis and the incidence of this disease is highest among those miners of many years' work in the mines when drilling was done dry. However, that practice was discontinued years ago and the younger miners show no signs of having contracted silicosis.

Ventilation is a must in all mines and the employers and employees both cooperate with State and Federal agencies to obtain the best working conditions possible in underground operations. Our mines are always open to both State and Federal agencies and their recommendations are always welcomed by the industry. During the past few years the major mining operations are in the uranium fields and here again ventilation has always been given first consideration in underground operations and the recommendations and suggestions of State inspectors as well as those of the AEC inspectors have always been followed implicitly.

Protective devices and practices have been provided wherever possible for the safety of employees in all of our mining operations. Of course, since the uranium boom in Colorado and other parts of the West, there has been a great increase in the number of operations and employees. This large increase has been quite frequently in isolated areas and has also resulted in 1- and 2-man operations which greatly increases the work of the mine inspectors. However, the industry can cite a decrease in both incidence and severity records as well as fatal accidents. The writer has had occasion to visit many of these isolated operations and has been told many times of the vigilance of our State mine inspectors in checking on their operations, no matter how isolated they may be. Access to hospitals and medical aid has always been given great consideration by the industry, in many cases both have been furnished by the mining company at the operations sites.

The Golden Cycle Corp. operates a coal mine near Colorado Springs and is quite familiar with the work of the Federal coal mine inspectors. We do not desire to deprecate the work of these men, however, we have had the opportunity to observe the needless duplication of effort throughout many years. Here again in the coal-mine inspections, Colorado is fortunate in having State coal-mine inspectors who are doing an excellent job and we cannot honestly see where the addition of the Federal coal-mine inspectors has increased the safety of the mines nor decreased accidents in coal mines. Many of our mines are already overburdened with a multiplicity of inspection reports and forms to fill out and return and a duplication in mine inspections would add a further burden on the time of the mine operators or their subordinates, and according to our experience would not benefit the operations nor the safety of the mines.

We of the mining industry have had ample opportunity to observe the splendid work that the safety engineers of the United States Bureau of Mines have done during the past many years. We feel the Federal agency can expand its activities in the field of mine safety and accident prevention and thereby accomplish much more in this field than could be accomplished by authorizing Federal inspection of mines and quarries. To properly accomplish this work through the United States Bureau of Mines, it probably would be necessary to provide adequate additional funds, but we are sure this could be done for considerably less increase than would be required for the addition of Federal mine inspectors.

When all of the above facts are given due consideration, there seems to be very little, if any, justification for the duplication of effort which would obtain by having Federal inspections of mines and quarries. Consequently, we in the mining industry urge the members of the subcommittee to give the careful study to this proposed legislation that it requires and weigh carefully the evidence submitted by the operators of this great industry of the West.

We trust that this information will be entered into the record of the hearing on this pending legislation, and in conclusion may we further urge the members of the subcommittee to table the pending House bill, H. R. 9343, and not bring it before the House for consideration at this time. We thank you for your gracious consideration.

Respectfully submitted.

MAX W. BOWEN,
Executive Vice President.

83066—56——39

STATEMENT BY WYOMING MINING ASSOCIATION

The Wyoming Mining Association has been advised of the holding of a hearing by the House Labor Subcommittee in Washington on September 3 to 7 concerning the need for legislation governing mine operations other than coal. The association has also been informed that statements of interested parties who are unable to appear in person will be accepted and will receive consideration. The association is pleased to set forth its position with respect to the situation in the State of Wyoming.

Prior to the advent of uranium in this State, most of the mining operations other than coal consisted of a trona operation, one iron operation, bentonite mines, and certain rock, sand, and gravel activities. Since most of these operations were carried on by substantial companies who, as a part of established procedure, install and observe safety precautions and operating conditions beyond the requirements of any minimum standard, the situation was reasonably well cared for although some need for suitable legislation was felt. The discovery of uranium and the constantly expanding nature of the uranium operations in the State has introduced many smaller operations whose practices are not as satisfactory as is usually the case after an industry has been more stabilized. The nature of many of these operations, and the mining problems which have developed as a part of this new field, have brought into focus the need in this State for an operations code to govern operations other than coal. In the opinion of the Wyoming Mining Association, the need for such a code is clear. The only question existing is whether the matter can best be handled by the Federal Government or by the legislatures of the several States.

It is the opinion of the Wyoming Mining Association that this matter should be handled by State government and State law. In voicing this opinion, the association acts not as an organization separate and apart from the mining operations which compose it but advisedly, in view of opinions and convictions expressed by the more substantial operators of the State themselves.

A number of factors appear to be quite material with respect to this problem. The development of mineral resources is a matter most vital to the interest of the State itself. With respect, particularly, to our Western States, their future is entrely interwoven with the aggressive and successful development of their natural and mineral resources. Such development is vitally affected by the nature of the operations engaged therein and no State can relinquish control of the manner of development of its mineral resources without, to a great extent, relinquishing its own participation in its own growth and success. It is believed that a State is concerned with the welfare of its citizens and the working conditions of its employees as well as its own public interest equally, at least, with the Federal Government and, facing the problem, is potentially as well equipped to deal with it as is the Federal Government. The added incentive of its own self-interest being at stake supplies impetus not often present in Federal action.

Such legislation, of course, is of vital interest to the operators themselves. It is to their interest that they participate in the making of such legislaion and have some voice in the manner of its enforcement and administration. It is likewise vital, not only to the operators, but also to the success of the code, that it be responsive to the needs of the parties upon whom it operates and sufficiently flexible to permit adaptation to developing circumstances and conditions as they appear. Such responsiveness and flexibility can best be attained by local authorities working in close relationship with the operators on one hand and the State authority on the other.

The desirability of some uniformity in the provisions from State to State is recognized. It is not believed that such uniformity can be attained only by the development of one code to govern all operations over the Nation. Uniformity under State action has been attained in many other fields of legislation and it is believed that such uniformity, to the extent found desirable, can be attained by action by the States themselves and through the several interstate councils which work from day to day in this field.

At the present time, the State of Wyoming has no operations code to govern mining operations other than coal. The need for such action was recognized some time ago and, at the present time, a committee of this association is engaged in the formulation of a code which will govern such operations. Representatives of mining organizations in the State have participated and are participating in its formulation. Investigation has been and is being made of provisions of other States. The code, when completed, will be presented to the State legislature when

it convenes in January of 1957 and it is felt that the legislaturew ill enact such a code.

The Wyoming Mining Association believes that this approach is greatly preferable to that of legislation by the Federal Government. Action by that Government in this field would mean the imposition of cumbersome administrative machinery and, beyond question, would mean that any operator would be denied ready and speedy access to the law or rulemaking authority, or recourse for administrative errors or administrative abuses which constantly appear. It would also mean that the State of Wyoming would be denied control of an activity vitally affecting its growth and public interest. Such a situation, in the opinion of this association, should not be permitted to develop.

In many respects, particularly, in face of a new industry in a State which frequently has difficulty in maintaining its position with respect to its more populous neighbors, the problems involved in a mine operations code are particularly local in nature. No code sufficiently rigid to guarantee satisfactory operating conditions and yet sufficiently flexible to meet circumstances as they arise from day to day and new problems as they present themselves has been or can be written. The only answer to the problem is a method of administration which, recognizing the public responsibility involved and the purposes which must be served, still is sufficiently responsive to adapt written law to changing conditions. Such administration can be attained only by State legislation providing for local administrators responsive and responsible to interests involved within the State of operation.

It is recognized that quite conceivably the Federal Government may also and of a certainty does have an interest in the problem and that to some extent the problem is Federal in nature. It is sincerely believed, however, that such Federal purposes may be served and such Federal interests may be protected by the continuing work of the State authorities as well, if not better, than by Federal administrative officials alone, working, of necessity, without clear knowledge of the State problems involved.

The consideration given by the committee of the House of Representatives to this statement is greatly appreciated. If the Wyoming Mining Association or any of the individuals working in that association can be of any further assistance with respect to this problem, it is hoped that call will be made upon us.

Respectfully submitted this 26th day of November 1956.

WYOMING MINING ASSOCIATION,
By R. LAUREN MORAN, *President.*

THE LAKE SUPERIOR IRON ORE ASSOCIATION,
Cleveland, Ohio, October 24, 1956.

Mr. RUSSELL C. DERRICKSON,
Chief Investigator, Committee on Education and Labor,
House of Representatives, Washington, D. C.

DEAR MR. DERRICKSON: With this letter, we are sending you four copies of our statement on behalf of Michigan underground mines. Permission to enter this statement was requested at the Duluth meeting of the subcommittee on August 24, 1956.

We will be glad to answer any questions that you or the committee may have on this statement, or on any phase of our iron mining operations.

With best regards, I am

Sincerely yours,

FRANKLIN G. PARDEE, *President.*

STATEMENT ON BEHALF OF MICHIGAN UNDERGROUND MINES

At the hearing held before your committee in the Federal Building, Duluth, Minn., on August 24, 1956, permission was granted to Mr. Frank Pardee, president, the Lake Superior Iron Ore Association, to submit testimony by written brief for inclusion with the verbal testimony presented at the hearing.

This statement is submitted pursuant to such permission and on behalf of the mining companies operating underground iron ore mines in the Northern Peninsula of the State of Michigan.

It is not our intention to attempt to refute the many inaccuracies in the statements presented to your committee by representatives of the United Steelworkers of America, nor do we intend to refute the numerous unsubstantiated accusations

of negligence which the union made against the mine operators. Some of the inaccuracies and accusations of negligence require comment as otherwise your committee will be left with an entirely erroneous impression of the safety conditions in Michigan underground mines.

With 1 or 2 minor exceptions, all of the Michigan underground mine operators in the iron-ore industry are likewise Minnesota operators. These include Pickands Mather & Co., M. A. Hanna Co., the Cleveland-Cliffs Iron Co., Inland Steel Co., Republic Steel Corp., Jones & Laughlin Steel Corp., and North Range Mining Co. These companies all have mine-safety programs and safety departments which operate with the same high standards in Michigan as they do in Minnesota and concerning which you were very fully informed at the hearing in Virginia, Minn., on August 22, 1956.

Witnesses appearing on behalf of the United Steelworkers of America made several statements with regard to what they considered the limited enforcement powers of the county mine inspectors in Michigan. Among these statements were the following: Mr. Jack Powell on page 116 of the record stated: "So, more and more, we are being forced into a position where mine inspections are made, in many cases, by superannuated former employees of the company who are just simply not physically able to make a proper and complete inspection of the mines, *and whose powers are so limited by the bill, which is now in effect in Michigan, that we just can't get mine inspection, good mine inspection*" (italics ours). Mr. John W. Cole stated on page 120 of the record that "I would also like to give you some idea of the mine inspector in our county. He has no power whatsoever. Any action he takes he must take through the prosecuting attorney."

It is apparent from the foregoing quotations from the testimony of union representatives and from other testimony presented by these men that there was, on the part of the individuals so testifying, a gross misconception of the powers and duties of the county mine inspector. Section 8 of act 163 of the Michigan Public Acts of 1911, as amended, Michigan Statutes Annotated, section 17.318 provides in part as follows:

"SEC. 8. The duties of the mine inspector shall be to visit all the working mines of his county once in every 60 days, and oftener if in his judgment necessary, and closely inspect the mines so visited, and condemn all such places where he shall find that the employees are in danger from any cause, whether resulting from careless mining or defective machinery or appliances or improper or unsafe methods of any nature; he shall compel the erection of a partition between all shafts where hoisting of ore is performed and where there are ladder ways, where men must ascend and descend going to and from their work. In case the mine inspector shall find that a place is dangerous from any cause as aforesaid, it shall be his duty immediately to order the man engaged in work at the said place to quit work, and he shall notify the superintendent, agent or person in charge to secure the place from the existing danger, which said notification or order shall be in writing and shall clearly define the limits of the dangerous place and specify the work to be done or change to be made to render the same secure, ordinary mine risks excepted."

From an examination of the foregoing section of the statute, it is apparent that the county mine inspector has summary power to require the closing of any mining place which he considers dangerous from any cause. He does not need to resort to the courts to enforce compliance with his order.

Some mention has been made in the record in the testimony of Mr. Jack Powell, record page 116, and in the testimony of Mr. John W. Cole, record page 120, to the general effect that county mine inspectors are either not able or not qualified to perform the functions of an inspector. In Marquette County, at least, where many of the large iron mines are situated, the county mine inspector is a young physically able man who was supported for office by the United Steelworkers of America.

Mr. Ambrose Airaudi states in his testimony, record page 141, that "There aren't any safety rules that I know of on the handling of dynamite or blasting." Mr. Airaudi is an employee of the Cleveland-Cliffs Iron Co., which company with others in the Michigan iron-ore industry distributes safety-rule booklets to all of its employees, which booklets contain a section on the safe use and handling of explosives. These rules are uniformly enforced throughout the industry in Michigan.

In the record, pages 159 to 161 inclusive, there is a discussion between Mr. Ronn, one of the union witnesses, Mr. Elliott and Mr. Powell regarding the county mine inspector's report of accidents. A list is given by Mr. Ronn, taken from the county mine inspector's reports of fatal and nonfatal accidents in

the years 1950 to 1954, inclusive, in Marquette County. On record pages 160 and 161, Mr. Ronn, in answer to Mr. Elliott's question, stated that the nonfatal accidents referred to were actually compensable accidents with an 8-day waiting period. This is not so. The accidents listed in the county mine inspector's report included all accidents, even those of a minor nature, in which there was 1 day or more of lost time. The number of serious compensable accidents was very much less.

An appreciation of the necessity of accident-prevention work began to unfold to a number of the operators of the Michigan iron and copper mines in 1910, with the result that early in 1911 one of the companies organized a department of safety. Several other iron-ore companies did likewise the following year. This was the beginning of a systematic study and procedure to bring about progress in the best methods to combat mine accidents, which in the succeeding years spread to all metal mining districts. Since then, to the present time, few if any of all industrial operations, have employed the many and varied methods that have been applied by the iron and copper mines of Michigan to control occupational hazards.

Mine operators are indebted to the United States Bureau of Mines for its data on accidents and recommendations for their prevention. The Bureau employs competent engineers and obtains trustworthy data in rendering its service.

Since 1912 the mining industry of the entire Lake Superior district has been the most active associated mine unit of the National Safety Council. A regional safety conference is held annually at Duluth. Hundreds of mine executives, mining engineers, safety inspectors, foremen, and workmen assemble for several days to hear and discuss papers upon the many problems involved in the prevention of accidents. All the iron ranges and also the copper district hold local safety conferences several times every year, which are well attended by representatives from the other ranges. An important feature of the local conferences is a discussion of current mine accidents and recommendations for their prevention.

A compilation of the safety rules and regulations that have been formulated and printed in booklet form for distribution to employees would make a voluminous publication. One illustration will verify this statement: One operator in 1911 printed 5,000 copies of its safety rules for workmen, in English, Finnish, and Italian print. Since then many new editions have been issued, which are necessary to keep abreast with the advance in safety activities. Carefully prescribed rules to insure the safety of employees are a definite phase in mine safety. The rules and regulations that prevail today have been formulated from thousands of experiences in metal mining and from the wealth of information springing forth from the Bureau of Mines, the National Safety Council, and other educational institutions.

Management recognizes that there are no substitutes to take the place of competent supervision. Men with limited vision and education no longer qualify in interpreting and administering the work of safety at the iron and copper mines.

The personnel of the supervisory force at the mines has been more than doubled and every working place in and about a mine is subjected to frequent inspections by superintendent, mine captain, foremen, and bosses. A shift boss is required to visit each working place in his territory at least twice a shift. It is the duty of the safety engineer to regularly inspect all working places and submit an independent report to the manager. At each mine members of the local labor unions accompany the safety engineers on their tours of inspection. Mine accidents do not occur because of insufficient or inefficient supervision. Dust and gas explosions are not metal-mining hazards. For everyday working conditions large-capacity fans force fresh air from surface to all working headings. Ventilation engineers constantly check volumes and collect samples of air under actual working conditions to insure maintenance of supply devoid of harmful contamination.

There is no possibility of always eliminating falls of ground in an underground mine, for the very nature of mining involves openings with rock-hanging walls. There is no method of extracting iron ore or copper rock in an operation which does not have the approbation of the mining profession. No expense is spared in providing proper support to safeguard miners where ground will not remain intact when exposed to the atmosphere.

The use of explosives, the operation of skips and cages, haulage, and other occupational hazards have ever been given intensive study by mining men, and,

with the assistance of manufacturing experts, a safety code covering each of these operations has been productive of many splendid accident records.

A record of almost 40 years' service in the training of employees in first-aid methods and the wearing of oxygen-charged apparatus that enables them to fight underground fires stands to the credit of the mining companies.

The Bureau of Mines maintains a central first-aid and mine-rescue station at Duluth to serve the mines of the entire Lake Superior district. Its engineers instruct mine employees and certify those who qualify for its approval. Wages are paid for time spent in training. In recent years the Bureau has been conducting a school in safety, a contribution to mine safety that has met with favor.

Any conclusion deduced from a study of industrial accidents that fails to balance the influence of the personal element in their occurrence will lead to unfair conclusions as to management's efficiency in this line of human endeavor. Fatal accidents continue to occur in the home, on the street, on the sport field, and wherever humans spend their time. There is much bemoaning, but nobody knows how best to reach the personal element in humanity that will lead to safer ways of living. For years mine management has gathered all the facts that have a direct and indirect bearing upon the prevention of accidents; assembled and used them to influence the thoughts and actions of foremen and workmen so that they would think and act more safely than they would have unaided. To this end all accidents are considered object lessons for future avoidance of repetition of similar ones.

In addition to the above practices and safeguards, the companies have taken all possible precautions to protect their abandoned operations. Old shafts, no longer used, are sealed over and fenced; areas in which the ground has settled are fenced and warning signs posted. This also applies to surface pits which are not in use. All mines and operations presently in use are surrounded by guard fences to keep unauthorized persons from inadvertently getting on the premises.

The operators of all metal mines in the State of Michigan in 1955 voluntarily adopted a code of safety standards that define safe practices which govern all phases of underground mining. Many of the operating companies have adopted this code of safety standards as a minimum in safe practices, but adhere to more stringent rules and practices that they have set forth in their own company safety rule books which are issued to all of their employees. Copies of this code and copies of representative mining company safety rule booklets are submitted herewith. Some of these safety rule compilations are now in process of periodic revision.

Exhibit A of this brief presents an article written by Mr. Gil G. Grieve, of the National Safety Council mining section. This article explains and depicts the activities of the Lake Superior Mines Safety Council, an organization founded in 1919, wholly supported by the mining companies of the Lake Superior district and at the present time nationally known for its outstanding safety work in its endeavor to curb the hazards of mining that cause injury to our employees.

Exhibits B, C, and D, excerpts taken from the United States Department of the Interior, Bureau of Mines, Circular No. 7744, show the declining trend in accident and fatality rates in underground mining from 1946 through 1954 in the Lake Superior district. The great majority of underground mines in the Lake Superior district are located in northern Michigan.

Exhibit E, and excerpt taken from the Mining Congress Journal of February 1954, compares the injury frequency rates over a 5-year period between coal mining and metal mining. The reduction of 35 percent in metal-mining fatalities during the period from 1942 through 1953 is impressive and encouraging.

Exhibits F, G, and H depict by graphs the steady decline in fatalities in underground northern Michigan mining over the past half century. Statistics to compute these graphs were taken from the county mine inspectors' reports. Complete files of the county mine inspectors' reports are available to anyone interested in their contents at the county clerk's office.

Some comparisons have been made between safety in underground mines and safety in other occupations throughout the various States in which mining is an important industry. Some of these comparisons are misleading and yet considering the known hazard in underground mining, it is surprisingly safe. One index of its relative position in the safety scale is afforded by an examination of the published rates approved by the State of Michigan Insurance Commission

for Workmen's Compensation Insurance. A few examples of these rates, which are based upon industrial injury experience, are as follows:

Industry:	*Rate per $100 payroll*
Underground mining	$3.58
Surface mining	3.29
Farming	3.28
Iron foundries	3.72
Chimney construction	9.18
Wrecking and dismantling	7.46
Logging and lumbering	14.05
Electric light or power line construction	3.55
Sawmill labor	5.05
Street or road construction with rock excavation	7.11
Roofing	4.40
Iron or steel scrap dealers	4.73
Ice harvesting	8.35
Stone crushing	3.51

On the basis of the progress attained in preventing accidents and also by a comparison of their records with those of metal mines in distant fields, the mine managers of Michigan mines are in a position to contend that they possess records that demonstrate that they have been exceptionally efficient in the promotion of safety for their employees. Their records refute wanton accusations of being neglectful and in failing to perform their obligated duty to society, and they should be accepted as sufficient evidence that there is no need at this time for additional legislation whereby mine inspection and supervision will be changed.

Respectfully submitted.

F. G. MICHELS,
Safety Director North Range Mining Co.; president, Lake Superior Mines Safety Council.

WHEN MINES WORK TOGETHER

Through the Lake Superior Mines Safety Council, member companies are making new safety records, National Safety News, November 1952

SCHEDULE A

Cooperation in safety by mining companies, throughout the Lake Superior region is probably unexcelled by any other group of similar companies in any industry. These mining companies working together, as well as with the local and Federal Government mining agencies, employee safety committees, equipment manufacturers and organizations interested in mining safety, have produced a remarkably high standard of safety in the district.

The frequency and severity of injuries are sharply lower than the averages for the mining industry as a whole. In fact, many mines have records that compare favorably with the records of plants in low-hazard industries. Underground and open-pit mines regularly establish new high marks in the number of man-hours worked without a disabling injury. The first open-pit operation of any type in the United States to work more than 2 million injury-free man-hours was a Minnesota mine.

The coordinating organization for mutual efforts by the mining companies and the other agencies, is the Lake Superior Mines Safety Council. It has the full backing of the managements of the companies. They support the council financially and their safety engineers take an active part in the work of the council. Superintendents, foremen, and workmen are given time away from the job to attend the meetings of the council and to participate in its activities by preparing papers, models of safety devices for exhibition, and otherwise assist in the general safety program.

Lake Superior mining companies also take an active part in solving the safety problems of the mining industry as a whole. All members of the Lake Superior Mines Safety Council, with a few exceptions, are members of the mining section of the National Safety Council. For many years Lake Superior mines safety engineers have been leaders in the work of the mining section and company officials have often given papers before the mining section at the annual congress and exposition.

Close cooperation in the Lake Superior region began in 1919 at a small meeting of safety men from 19 companies, county and Federal mine inspectors and representatives from safety-equipment companies and similar organizations. The group continued to meet and expand, and by 1929 attendance at the annual meeting in Duluth reached 274.

Today the influence and prestige of the council is as great as ever but safetymen play a small role at meetings. The attendance at the meetings is predominantly operating people, ranging from company executives and supervisors of all grades to workmen. The programs also are largely by and for them. Due to the increased participation and attendance by operating personnel, the 1952 attendance at the 2-day general meeting in Duluth reached a new high mark, 815, making the Duluth Safety Conference one of the outstanding ones in the country.

During the year 1-day meetings are held monthly in various mining localities in Michigan, Wisconsin, and Minnesota. These meetings also are largely attended by superintendents and other supervisory personnel from nearby mines. Local safetymen prepare the program and make arrangements for the meeting.

The broad participation of key operating personnel in the safety activities of the council has been a major factor in getting interest and support for concrete safety measures on the job. An effective eye-protection program is difficult to achieve in any industry, and the mining industry, where the frequency of eye cases is relatively high, is no exception.

However, the wearing of goggles by surface and underground employees is firmly established in the mines of the Lake Superior area. Only two disabling eye cases occurred during a recent year in all the mines as the result of unified action. Twenty years ago one large company alone had 51 disabling eye injuries in a year.

The interchange of accident data and preventive information, sponsored by the council with the agreement of company managements, also has been an important factor in the uniformly high standard of safety throughout the district. The details of accidental injuries are circulated monthly among members for their information in preventing similar accidents. Statistics are compiled, analyzed, and compared annually by a member of the council, and the information is available to all.

The development of safety devices, and safety improvements in the design and construction of tools and equipment is publicized extensively. Each company makes models or takes pictures of its safety developments and exhibits them at the annual Duluth conference for others to see and adopt. At a recent conference about 250 safety ideas were exhibited.

These, and other equally substantial accomplishments, are the dividends from a cooperative safety policy in a segment of an industry noted for rugged individualism.

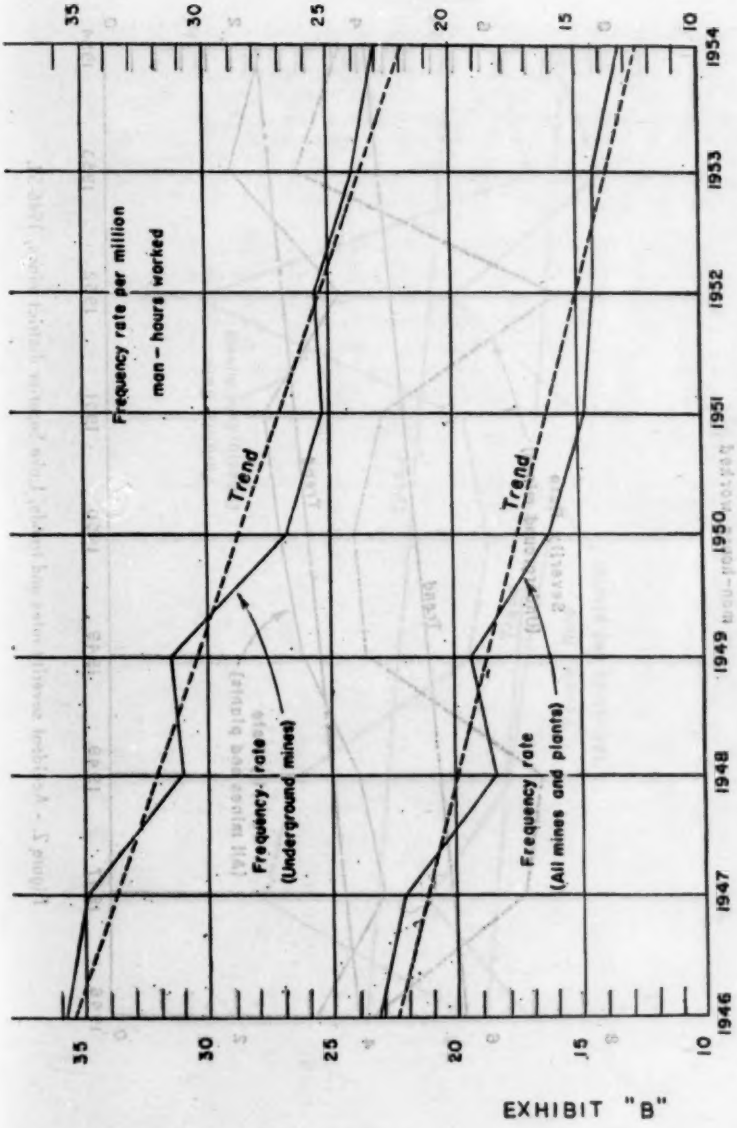


Figure 1. - Accident frequency rates and trends, Lake Superior district mines, 1946-54.

EXHIBIT "B"

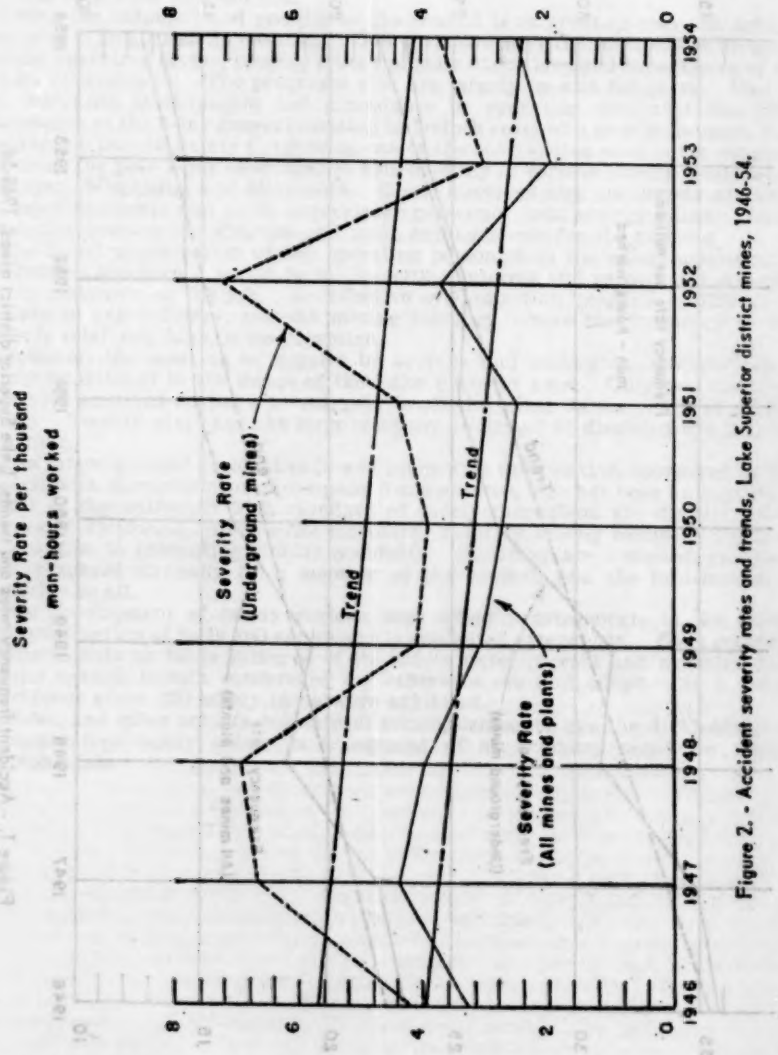


Figure 2. - Accident severity rates and trends, Lake Superior district mines, 1946-54.

EXHIBIT "C"

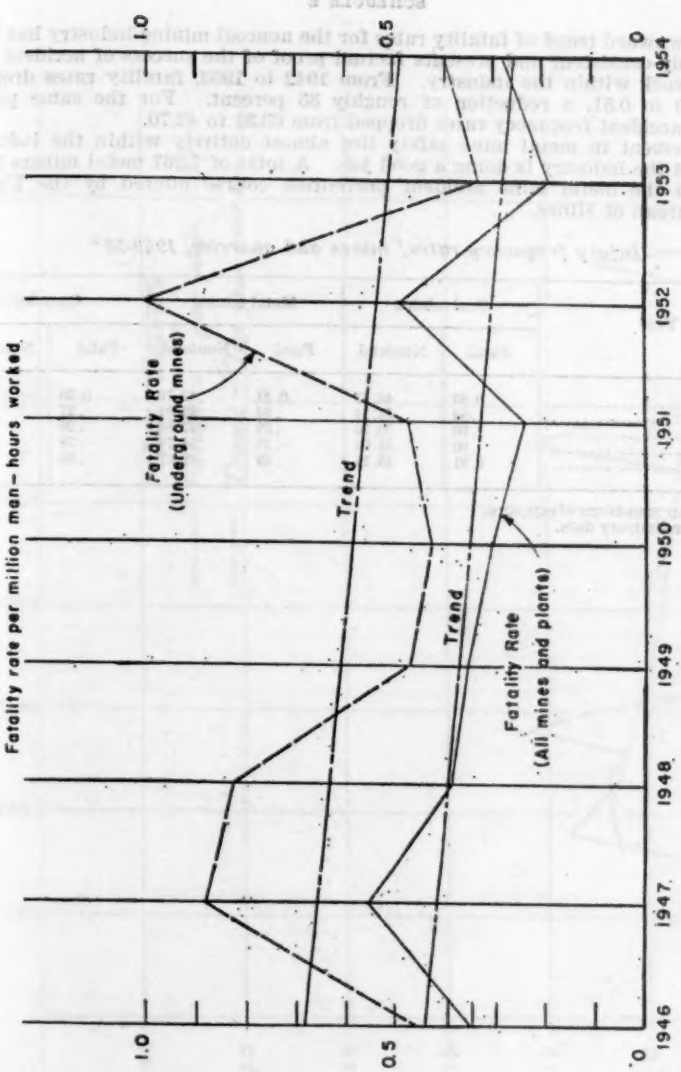


Figure 3. - Fatality rates and trends, Lake Superior district mines, 1946-54.

EXHIBIT "D"

Figure 2. - Accident severity rates and trends, Lake Superior district mines, 1946-54.

[Mining Congress Journal, February 1954]

METAL MINING SAFER, TOO

SCHEDULE E

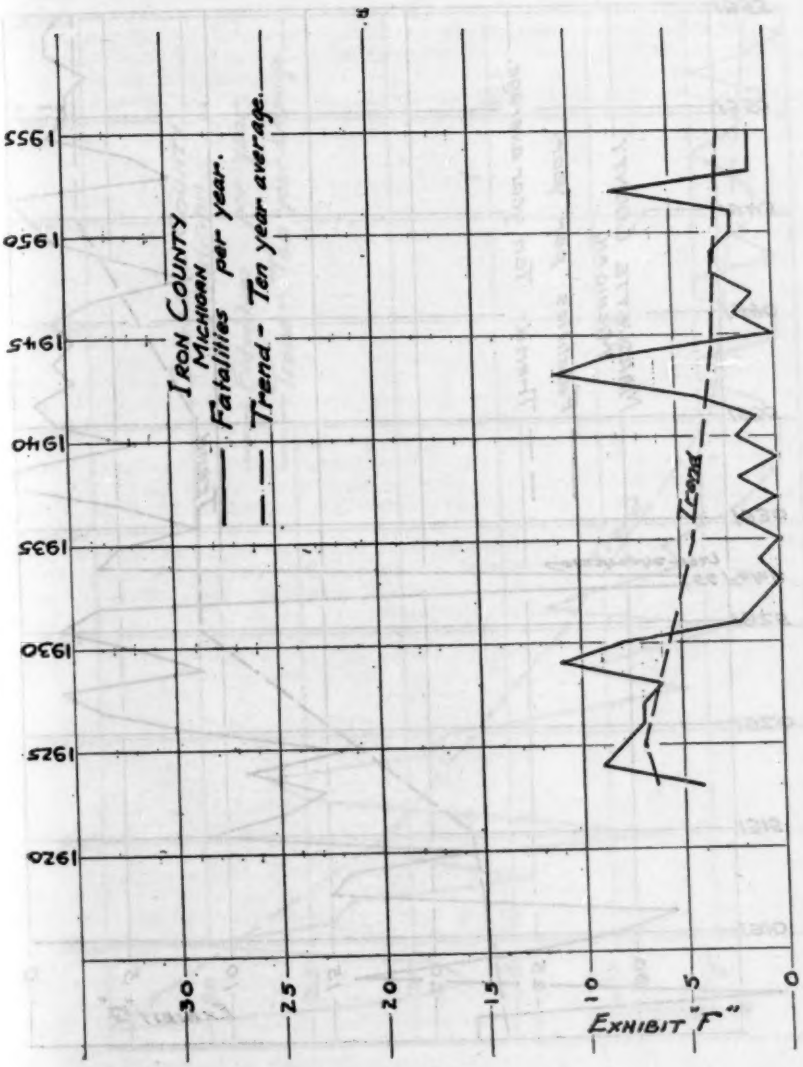
The downward trend of fatality rates for the noncoal mining industry has been remarkably consistent and presents factual proof of the success of accident prevention work within the industry. From 1942 to 1953, fatality rates dropped from 0.90 to 0.51, a reduction of roughly 35 percent. For the same period nonfatal accident frequency rates dropped from 63.31 to 42.70.

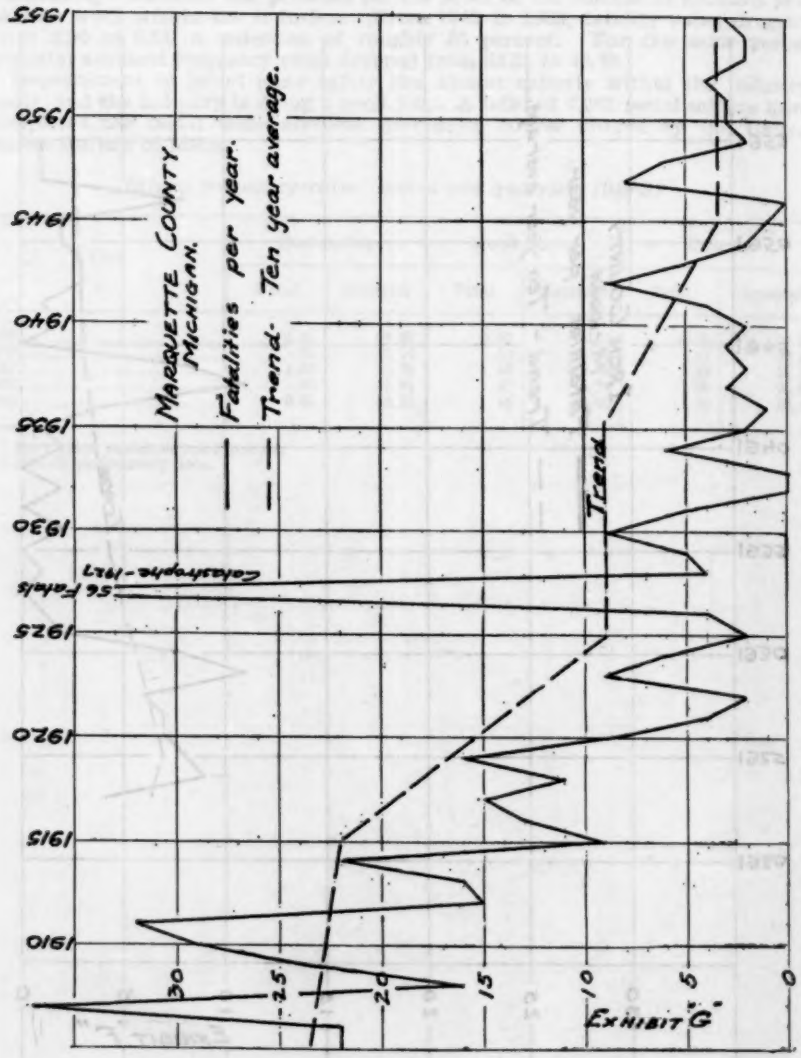
Improvement in metal mine safety lies almost entirely within the industry itself, and the industry is doing a good job. A total of 7,267 metal miners have completed the metal mine accident prevention course offered by the United States Bureau of Mines.

Injury frequency rates,[1] mines and quarries, 1949-53[2]

Year	Coal mining		Metal mining		Quarries	
	Fatal	Nonfatal	Fatal	Nonfatal	Fatal	Nonfatal
1953	0.82	48.67	0.51	42.70	0.26	24.85
1952	.84	57.14	.55	43.01	.27	25.32
1951	1.06	50.70	.59	42.84	.29	25.21
1950	.90	51.94	.57	44.74	.28	25.12
1949	9.91	55.11	.48	48.07	.36	26.48

[1] Per million man-hours of exposure.
[2] 1952–53, preliminary data.


IRON COUNTY
MICHIGAN
Fatalities per year.
Trend - Ten year average.
1955
1950
1945
1940
1935
1930
1925
1920
30
25
20
15
10
5
0
EXHIBIT "F"


MARQUETTE COUNTY
MICHIGAN.
Fatalities per year.
Trend- Ten year average.
Trend
Catastrophe - 1871
56 Fatals
1955
1950
1945
1940
1935
1930
1925
1920
1915
1910
30
25
20
15
10
5
0
EXHIBIT "G"

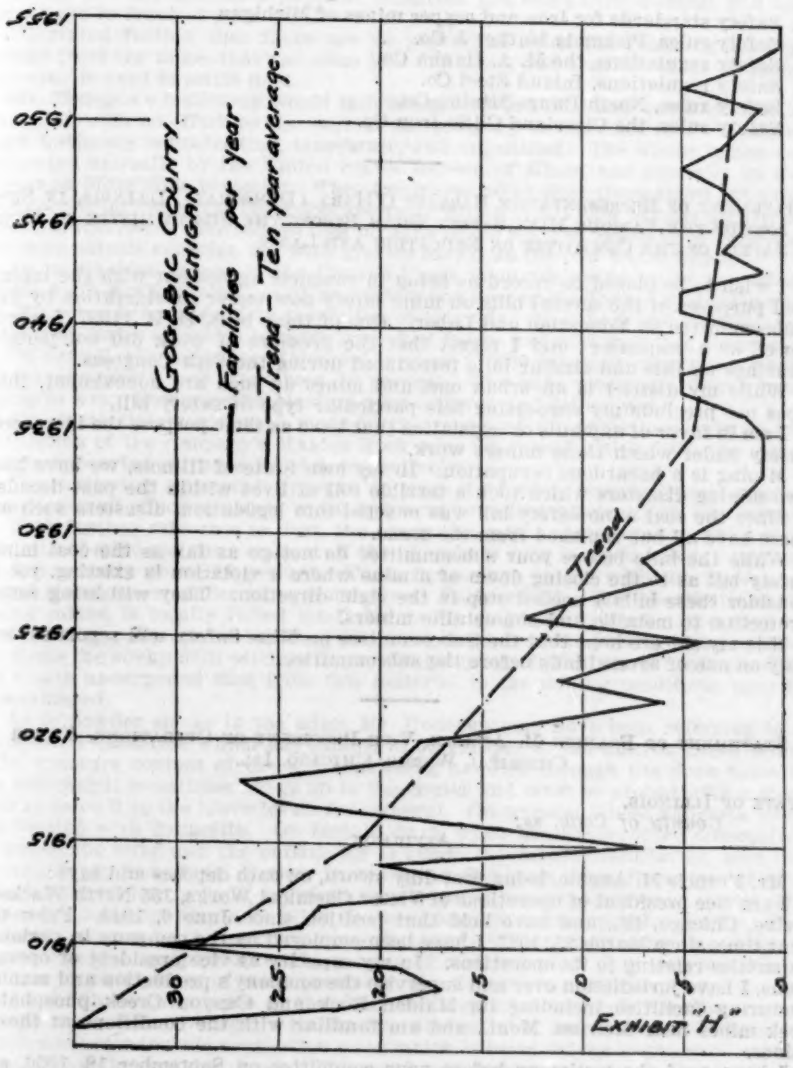

1961
1956
1951
1946
1941
1936
1931
1926
1921
1916
1911
30
25
20
15
10
5
0
GOGEBIC COUNTY
MICHIGAN
Fatalities per year
Trend - Ten year average.
Trend

EXHIBIT "H"

(The list of booklets following were accompanied with above statement, submitted by Lake Superior Iron Ore Association, Cleveland, Ohio, and are filed with the committee for reference:)

TYPICAL MICHIGAN UNDERGROUND MINE SAFETY RULES AND REGULATIONS[1]

1. Safety standards for iron and copper mines of Michigan
2. Safety rules, Pickands Mather & Co.
3. Safety regulations, the M. A. Hanna Co.
4. Safety regulations, Inland Steel Co.
5. Safety rules, North Range Mining Co.
6. Safety rules, the Cleveland-Cliffs Iron Co.

STATEMENT OF REPRESENTATIVE BARRATT O'HARA (DEMOCRAT), ILLINOIS, IN SUPPORT OF THE VARIOUS MINE SAFETY BILLS BEFORE THE SUBCOMMITTEE ON MINE SAFETY OF THE COMMITTEE ON EDUCATION AND LABOR

I wish to be placed on record as being in complete agreement with the intent and purposes of the several bills on mine safety now under consideration by the Subcommittee on Education and Labor. One of these bills, H. R. 11997, I introduced as a cosponsor; and I regret that the pressure of work did not permit hearings on this and similar bills introduced during the 84th Congress.

While my district is an urban one, and mines as such are nonexistent, this does not preclude my supporting this particular type of safety bill.

I am in favor of any bills or legislation that have as their purpose the increased safety under which these miners work.

Mining is a hazardous occupation. In my own State of Illinois, we have had two mining disasters which took a terrible toll of lives within the past decade.

Since the coal mine safety bill was enacted into legislation, disasters such as these have all but vanished from the scene.

While the bills before your subcommittee do not go as far as the coal mine safety bill as to the closing down of a mine where a violation is existing, yet I consider these bills a needed step in the right direction. They will bring some protection to metallic and nonmetallic miners.

It is my sincere hope that the Subcommittee on Mine Safety will report favorably on one of several bills before the subcommittee.

STATEMENT OF FRANCIS M. ANABLE, VICE PRESIDENT OF OPERATIONS, VICTOR CHEMICAL WORKS, CHICAGO, ILL.

STATE OF ILLINOIS,
County of Cook, ss:

AFFIDAVIT

Mr. Francis M. Anable, being first duly sworn, on oath deposes and says:

I am vice president of operations of Victor Chemical Works, 155 North Wacker Drive, Chicago, Ill., and have held that position since June 6, 1949. Prior to that time, since March 23, 1927, I have been employed by the company in various capacities relating to its operations. In my capacity as vice president of operations, I have jurisdiction over and supervise the company's production and manufacturing facilities including its Maiden Rock and Canyon Creek phosphate rock mines near Melrose, Mont., and am familiar with the conditions at those mines.

I have read the testimony before your committee on September 18, 1956, at Butte, Mont., of Mr. Sylvan Donegan, president of the Melrose Mine, Mill, & Smelter Workers Union No. 904, who is an employee of Victor Chemical Works in its Canyon Creek mine. In reply to that testimony, I desire to present the following statement for your consideration.

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[1] Booklet No. 1 contains the overall safety regulations adopted by the iron and copper mining industries. Each company has safety regulations on all phases of safety. These submitted are typical company rules and regulations governing safety in underground mines.

Mr. Donegan, perhaps unintentionally, presented what I believe to be a very misleading picture of conditions in the two Victor phosphate rock mines referred to. In his testimony Mr. Donegan stated that in these mines "an acute gas problem exists" because of "blasting at all times of the shift" and a lack of ventilation. According to Mr. Donegan:

"Half the time you can't see your hand in front of your face, and then half the time you are in such a physical condition you don't care whether you see your hand in front of your face."

He stated further that there are no provisions made for removing dust or smoke from the mine, that the mine is a dry mine, and that no water or spray or vapor is used to settle dust.

Mr. Donegan's testimony would indicate a very bad dust and gas condition in the mine with no effort on the part of the company to alleviate it. We believe such testimony is misleading, inaccurate, and unjustified. The Victor mines are inspected annually by the United States Bureau of Mines, and annually by the Montana State mine inspector. They are inspected at least three times annually by representatives of the insurance company with which Victor carries industrial accident insurance. We believe that no mine in the State of Montana is inspected by more outside agencies, nor with greater care than the two Victor mines.

As to the dust hazard in the Canyon Creek mine, we would quote the report of Mr. L. D. Knill, mining health and safety engineer of the United States Bureau of Mines, on his mine-safety inspection of this mine on June 7 and 8, 1956. On page 3 he states: "Health hazards from dust fumes and mist were not observed."

On page 2, the following statement is made: "The inherent moisture content of the phosphate rock was about 10 percent. The mine workings ranged from damp to wet. Boreholes for blasting were collared and drilled wet."

The same statements were made in the report of the same inspector on his inspection of the company's Maiden Rock mine on June 5 and 6, 1956, the statements appearing on pages 4 and 3, respectively.

The following statement appears on page 4 of each report: "Good mining practices and effective safety measures were practiced efficiently in this mine."

With further reference to dust, the committee will be interested to know that the run-of-mine moisture content of the phosphate rock is never below 9 percent and frequently above 11 percent. These figures are on file with the Bureau of Land Management under lease North Great Falls 086571. The phosphatic shale being mixed is locally called mud, due to its moisture content. It cannot be drilled in preparation for blasting, without a large amount of water being applied to dilute the sticky drill cuttings to prevent plugging of the tools. It is impossible to create undergound dust from this material in the mining conditions usually encountered.

As to powder smoke in the mine, Mr. Donegan may have been referring to a temporary condition which has existed in two stopes in the Canyon Creek mine. The moisture content of the wet rock being handled through the draw-holes is so wet that it sometimes hangs up in the chutes and must be probed with a steel bar to force it to the lower levels for removal. On occasion, these hang-ups must be blasted with dynamite. On certain days, when the temperature differential between the mine and the outside air is small, the natural ventilation, plus the forced draft from fans, is slow in removing the gases from these two stopes. During these slow periods, sufficient time is sometimes not allowed by the miners after the hang-ups blasts, to allow for complete removal of powder smoke. The miners' reentry to the working place is largely within their control and since the are paid in proportion to the volume of rock removed, they may sometimes return to their places of work prematurely. Corrective measures as to the condition in these two stopes at the Canyon Creek mine are and were in progess at the time of Mr. Donegan's testimony. In fact, they were referred to by him. Such measures include ventilation raise which is being driven to the surface, 320 feet above the working level. This work was begun as soon as the condition noted above became apparent. This raise can be driven, however, at the rate of only 20 feet a week, and its ultimate length will be 320 feet. Thus, a period of 16 weeks is required for completion. In the meantime, secondary blasting is being held to a minimum.

With the advent of colder weather, a good flow of air has been restored. The smoky condition at this point is not expected to recur, since the adverse weather conditions which reduce the rate of ventilation will not return until the spring of 1957, and by that time the ventilation raise will have been completed. All other working areas of the mine are well ventilated by natural and induced drafts through raises driven to the surface at frequent intervals.

No grievance was placed by the union or any employee at any time over this smoke condition or any smoke or dust condition, lack of sprays, etc., at either mine. It is unfortunate that a smoke condition which existed for perhaps 1½ months out of 6 years of operations, in a section which represents only 5 percent of the total working area, was described to your committee as a general condition of the mines.

Mr. Donegan's statement that there is no water to settle dust and that the mine is a dry mine is not supported by the facts. At two working faces, drift (development) tunnels are being driven through hard country rock with a high silica content. This hard material is saturated with water during the entire cycle of its mining progress. The holes are collared and drilled wet, and the excavations are washed down with water, the broken pile of rock is thoroughly wetted down prior to loading for removal from the mine. There is no hazardous exposure to silica dust in these mines. These two areas are the only places where dry rock is being removed.

Mr. Donegan testified that there is no safety committee in the union, no active grievance committee, and no joint safety committee with the management. We do not know whether there is a safety committee within the union. There is an active grievance committee. A joint union and company safety committee existed during the years 1952 and 1953. This latter committee was ineffective and was discontinued in 1953. At that time, the company employed a safety engineer whose sole duty was to improve safety measures. As the scope of operations was increased, however, one man could not keep up the necessary inspections, and an improved method of safety control was adopted. Two graduate mining engineers whose duties include sampling, surveying, and measuring underground excavations, and occasionally supervising as shift foremen, were delegated the following tasks:

(1) Make continuous safety inspections.
(2) Compile records on their findings.
(3) Make and ask employees for recommendations.
(4) Hold safety meetings with labor and management, both collectively and singly.
(5) Follow up on safety recommendations.
(6) Conduct research on safety literature, movies, and slides.
(7) Arrange first-aid training.

These men are in close contact with every working surface in the mines, every day, and with the miners and supervisory employees. It is their duty to know what conditions prevail and what problems are encountered in each working place. I believe that the accident record at these mines, which I shall later refer to, will conclusively demonstrate that these engineers have functioned efficiently.

Classes in the Bureau of Mines first-aid methods for all employees are conducted by company officials at 3-month intervals by an instructor certified by the Bureau of Mines.

During Mr. Donegan's testimony, Mr. Fjare observed that the safety record of these mines must be good, and with this Mr. Donegan agreed. Mr. H. F. Johnson, the company's mine superintendent at these mines, received a safety award from the National Safety Council for supervising his men in the Canyon Creek mine during 1955 without a lost time accident from a fall of rock. As of October 22, 1956, both mines had operated 166 consecutive days without a chargeable lost time injury from any source. The following table shows the accident record from 1952 to October 1, 1956:

Year	Number of lost-time injuries for year	Number of fatalities [1]
1952	25	1
1953	27	1
1954	4	0
1955	17	0
1956 [2]	4	0

[1] None of the fatalities was due to "falls of ground."
[2] Up to Oct. 1, 1956.

The 1956 daily tonnage is approximately three times the 1952 daily tonnage.

It should be stated that the labor agreement at these mines contains contractual provisions for safety and that there is an established grievance pro-

cedure in that agreement. No grievance, however, has been filed at any time at either mine over safety or health conditions. Although this grievance procedure was established in 1951, we are proud of the fact that not a single grievance has formally found its way into these procedures. It is inevitable in mining that undesirable working conditions are encountered from time to time, but it has been possible in the Victor mines to correct most of them quickly. The company is proud of its mining record, proud of its safety record, and of its employment record.

We have what we believe to be an extraordinarily good employment record. From October 1, 1955, to October 1, 1956, the average number of hourly employees at these mines was 115. The monthly average of those who quit was 2.25, including students who were employed for the summer months only. Excluding these students from the calculations, the number of hourly employees who quit is less than 2 a month. This labor turnover is the more remarkable in that the mines are located in a sparsely populated area. Of the 115 hourly employees, only 6 live near the mines, 4 drive 120 miles round trip each day from Deer Lodge, 36 drive 70 miles round trip from Silver Star, Sheridan, and Twin Bridges, 23 drive 60 miles round trip from Butte, 11 drive 60 miles round trip from Dillon, 4 drive 40 miles round trip from Glen, and the remaining 31 make a daily round trip of 20 miles from Melrose and nearby ranches. Of these 115 hourly employees, 50 have been in the company employ from 3 to 6 years. These facts should be considered in light of the fact that these mines were first opened only 6 years ago.

Absenteeism averages about two persons daily.

In view of the long distance traveled and the fact that wages for mining in western Montana are fairly uniform, the low rates of turnover and absenteeism would indicate that the Victor mines are attractive, healthy, and safe places to work.

Further, affiant saieth not.

Respectfully submitted,

FRANCIS N. ANABLE,
Vice President of Operations,
Victor Chemical Works.

Subscribed and sworn to before me this 5th day of December 1956.

[SEAL] HARRY E. JACKSON,
Notary Public.

My commission expires February 9, 1959.

HOUSE OF REPRESENTATIVES,
Washington, D. C., December 6, 1956.

COMMITTEE ON EDUCATION AND LABOR,
House of Representatives,
Washington, D. C.

(Attention: Mr. Lee Metcalf, chairman, Special Subcommittee on Mine Safety Legislation.)

GENTLEMEN: I am writing to acknowledge and thank you for the letter from Mr. Fred G. Hussey, the chief clerk, dated November 20, 1956, advising me that your subcommittee is holding hearings on mine safety legislation from December 3 to December 7, inclusive.

I am glad to submit this statement for the record in behalf of H. R. 9269, Introduced by Congressman Kelley, and identical bill H. R. 11658, which I introduced on June 7, 1956. As it is my understanding that Congressman Kelley plans to reintroduce this measure in the 85th Congress and I have found much merit to the provisions of this bill, I wish to go on record in favor of the bill, and assure your committee that I will lend every support to its passage in the 85th Congress.

Sincerely,

JAMES G. FULTON.

STATEMENT OF NEW MEXICO MINING ASSOCIATION, SANTA FE, N. MEX.

This statement is prepared on behalf of the New Mexico Mining Association by C. H. Murphey, executive director. The association is comprised of operators representing more than 90 percent of the total mineral output of the State of New Mexico, and approximately 650 individuals who are interested in mining directly or by association—as suppliers, etc.

Aside from our feeling that Federal inspection infringes States rights, we wish to emphasize the following points, which we think are of importance:

(*a*) Statistics compiled by the National Safety Council indicate substantial improvement in accident rates as compared to the period 1935–39. Such improvement approximates 50 percent and we feel is attributable to efforts of the individual operator in harmonious cooperation with State agencies. It is our belief that this progress will continue.

(*b*) Industry on its own is expending considerable effort toward safer operations and in most cases maintains a staff capable of educating employees in the value of safety. In our opinion this is the most fertile field in which accident reduction can be obtained. The individual's desire to work safely is essential to a perfect record. It is doubtful if Federal controls would do anything to further our aims.

(*c*) Should the Government enter the field of inspection and safety control, it is likely that private efforts in some quarters would be decreased as the Government assumed the responsibility. In other words, some employers would feel that the assumption of responsibility by the Government relieved them. No amount of policing will accomplish as much as education does in the prevention of accidents.

(*d*) Over the past two decades the State has made considerable progress in the elimination of accidents. During the current year our State inspection force has been increased 66⅔ percent, which provides personnel capable of compiling such records as may appear necessary to any safety or health investigation that is considered essential. With an adequate and competent State inspection staff, the need for further inspections is not apparent to us.

CALUMET & HECLA, INC.,
Calumet, Mich., December 10, 1956.

Hon. LEE METCALF,
Chairman, Subcommittee on Mine Safety,
Committee on Education and Labor,
House Office Building, Washington, D. C.

DEAR MR. METCALF: I am submitting the enclosed exhibits for inclusion in the official records of your committee. These exhibits illustrate some of the phases of the Calumet Division's accident prevention program for our mining operations.

Exhibit 1: Safety rules for the prevention of injuries.

This is a copy of the current safety rule book issued to all mining personnel. We have had printed safety rules in our operations for approximately 40 years.

Exhibit 2: General manager's letter concerning rule books.

This is the letter mailed to all mining personnel at their home addresses which accompanied the current rule book.

Exhibit 3: Accident prevention and safety responsibilities at the Calumet Division.

This is the general manager's statement of responsibilities issued to all supervisory personnel.

Exhibit 4: Supervisors' safety code.

This is a brief summary of supervisory safety responsibilities. Cards were recently distributed to all supervisory personnel.

Exhibit 5: Safety instructions, new employees, mines.

This is a checklist which is prepared for every new underground employee. An employee's foreman is responsible for explaining each item on the list. As the items are completed they are signed and dated by the foreman. When the entire sheet is completed it is signed by the employee, a safety department representative, and filed in the employee's personnel records.

Exhibit 6: The foreman's role in management, a company training program.

This is an article on a foreman's training program of the Calumet division begun in January 1956. A supervisory training program which preceded this one

also placed emphasis on the importance of safety. Marked sections on pages 3, 4, 5, 6, and 7 show the part safety plays in this program.

Exhibit 7: Union agreement, section XVI.

This is the safety and health section of our current agreement with the United Steelworkers.

Exhibits 8–17: Red Metal News, February, April, and October 1955, and March, April, June, August, September, October, and November 1956 issues.

These are copies of our monthly employee magazine which is mailed to all employees at their home address. Some article or picture on safety is included in each issue. Typical features are marked in red. They include information on Bureau of Mines first-aid training, our safety-award program, a contest on safety rules, and announcement of our eye-protection program, under which we will provide all underground employees with safety glasses.

(The exhibits referred to were filed with the committee, and are available for reference.)

I would also like to take this opportunity to present additional information about our safety activities. Mr. John Cole's testimony at your subcommittee hearing in Duluth, Minn., on August 24, 1956 (p. 110 of the stenographic transcript), states "The Calumet & Hecla Mining Co., that I work for, gives a lot of lipservice to safety but no real action is ever taken." This is a serious charge. It is even more serious, considering that Mr. Cole is a United Steelworkers safety representative, and our union agreement provides that "The company and the union will cooperate in an effort to eliminate unsafe and unhealthful working conditions." Even before our employees were organized we had management-employees safety committees for many years.

Our company has had a full-time safety department since 1930 reporting directly to the general manager or the director of industrial relations. Prior to this, there was a full-time mine rescue attendant in the mining department. At present, our safety department consists of a manager and three safety inspectors. All of our mines are regularly inspected by our safety people. Once a month they are accompanied by a union safety representative.

We have been active members in the National Safety Council since 1915. Two of our former safety managers were chairmen of the mining section. Since 1919, we also have participated actively in the Lake Superior Mines Safety Council and regularly send supervisory personnel to their meetings. We have a well-trained 30-man mine-rescue team that receives Bureau of Mines instruction twice a year. We have conducted mine rescue and first-aid training continuously for nearly 40 years. We have trained over 1,000 employees in mine rescue and over 10,000 people in first aid. Our safety people work closely with the Michigan Department of Health on ventilation and dust control.

Our management team from the general manager to the shift foreman is solidly behind our safety program, and we certainly don't consider our activities as "lip service."

Another statement of Mr. Cole's makes us question his testimony. On page 123 in answer to Mr. Elliott's question of what happens to a shaft when it is finished, Mr. Cole replied: "No, they don't. They merely erect a barbed wire fence around the collar of the shaft. The hole is still there. Anybody who wants to go through the trouble of crawling through the barbed wire can fall down the shaft. It is very simple. They never seal it off with concrete or anything. If they do, they throw a few boards across it and that is left to rot."

The truth is that all abandoned shafts are protected by a 5½- to 6½-foot barbed wire fence. These are inspected by our personnel at least twice a year. Further precautions are taken at abandoned shafts which are near residential areas. They are sealed at the surface with 10 by 10 inch timbers and covered with a pile of mine rock and sand. They are also enclosed with a double barbed wire fence, which is carefully inspected each month. Where children are known to play in the vicinity, 50 feet of the shaft is filled with mine rock. These areas are clearly marked with signs and are periodically patrolled by our security officers. If Mr. Cole believes his testimony, he certainly has not bothered to investigate the situation.

Thank you for the opportunity to submit this information. We would be pleased to have you and your committee visit our operations at any time and will be most happy to answer any questions which you may have.

Very truly yours,

A. S. KROMER,
Vice President and General Manager.

STATEMENT OF A. H. SHOEMAKER, GENERAL MANAGER, HOMESTAKE MINING CO.

I am A. H. Shoemaker, of Lead, S. Dak., general manager of Homestake Mining Co., the largest gold producer in the Western Hemisphere. We respectfully present to you the following comments regarding the identical bills, H. R. 9269 and H. R. 9343, which seek to empower the Bureau of Mines to make annual investigations, inspections, and recommendations with respect to mine safety in the metallic and nonmetallic mines of the country.

The Homestake mine has been an operating property since the year 1877. Presently we employ approximately 1,800 men. We have had a safety program in our mine for nearly half a century. We regularly employ three full-time safety engineers, who constantly devote their time and energy toward the improvement of working conditions and safety. We have an employee safety-suggestion program with awards to the winners. We have a well integrated safety-committee system, with a central safety committee composed of the general manager and all department heads, a monthly meeting of the mine superintendent, safety engineers, and all underground foremen, and a workmen's mine safety committee. These committees meet to consider accident reports and to make recommendations with a view to accident prevention.

We are well acquainted with the research work of the Bureau of Mines in the field of mine safety and the excellent educational program of that agency with respect to mine-rescue work. For many years we have called on the Bureau of Mines for assistance in mine rescue and first-aid training. The high regard of our industry for the work of the Bureau of Mines is ample evidence of the effectiveness of the present relationship.

The "hardrock" mining industry of the West has an enviable safety record. The western mining States have State mine inspectors functioning under the framework of State mining codes which are set forth in the various State statutes. Such State officials, acting in conjunction and cooperation with the safety departments of the various mine operators, have proven more than adequate to competently handle problems of mine safety.

We see no reason whatsoever for the Federal Government to invade this field of endeavor. Basically and fundamentally this is a matter of States rights, and an apt illustration of the constant reach for power on the part of those proponents who advocate an ever larger and larger central authority calling the signals from Washington. Such proposed Federal legislation, if enacted, would serve only to weaken the effectiveness of the State mine-safety programs now in existence.

Mine operators of the West are keenly aware of safety matters, have good safety programs, and obviously are interested in preventing accidents, not only for humanitarian reasons but because it is to the best economic interests of both employer and employees to establish safety programs which reduce the accident hazard. We believe that if H. R. 9269 or H. R. 9343 or similar bills were adopted by the Congress, the net result would be to convert the Bureau of Mines into the role of a policeman, seriously impair its present efficiency in the field of research, and accomplish little, if anything, in improving safety conditions in the mines of the West.

UNIVERSITY OF MICHIGAN,
INSTITUTE OF INDUSTRIAL HEALTH,
Ann Arbor, December 14, 1956.

RUSSELL C. DERRICKSON,
Chief Investigator, Committee on Education and Labor,
House of Representatives, Washington, D. C.

DEAR MR. DERRICKSON: Your kind letter of November 27, offering me the opportunity of appearing before the Committee on Education and Labor's subcommittee studying proposed legislation on mine safety came at a most inopportune time for me to come to Washington. May I, therefore, take this opportunity to acquaint you with my views upon this important matter.

In addition to many physical hazards, lung disease constitutes a most serious hazard. Silicosis from the inhalation of dust containing crystalline silica or pneumonconiosis from dusts such as coal dust or amorphous forms of silica are prevalent. In addition, some metallic miners run the hazard of systemic metallic poisoning, and in uranium mines of exposures to excessive amounts of radioactive materials.

Present-day standards for the numbers of particles of silica dust permitted in the working atmosphere, and our control measures, are not adequate for the

elimination of the plumonary dust diseases. Imoprtant factors, such as the significance of size of the particles and the mode of action or mechanism by which these dust particles produce disease, are ill understood. The peculiar and tremendously increased susceptibility of the dust-diseased lung to develop pulmonary tuberculosis constitutes a real serious hazard. There is a need for impartial investigations and basic research studies in these areas. Moreover, the disability produced by these lung diseases is usually quite out of proportion to the changes visible on an X-ray film of the chest. New and more sensitive tools for determining pulmonary disability and, indeed, for use in the early detection of developing pulmonary disease before changes are evident on X-ray is badly needed.

I am sure the committee is fully cognizant of the seriousness of this problem, and that proposed legislation in this field will take these facts into consideration. I strongly urge the committee's support of research investigations and studies in pulmonary dust diseasse leading to their eradication.

Sincerely yours,

SEWARD E. MILLER, M. D.,
Director.

Mr. METCALF. Unless there is something else to come before us, the hearings of the subcommittee are adjourned.

(Whereupon, at 3:30 p. m., the committee was recessed subject to call.)

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